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The Impact of Saving and Credit Cooperatives on Food Security in the West Amhara Region of Ethiopia

By

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Dedication

This PhD research is dedicated to poor but kind Ethiopian farmers; and for the memory of my late sister Emenesh Ayalew and late brother Nigus Wubamlak

Abstract

In rural Ethiopia, among other things, lack of adequate financial service is considered as the basic problem to alleviate rural poverty and to solve the problem of food insecurity. Commercial banks are restricted to urban centres. Providing rural financial service through RUSACCO to the poor has been proposed as a tool for economic development and for achieving food security. Evidence from research in this regard has been so far scanty, especially in rural Ethiopia.

The aims of this study are to analyze the determinants of membership, to identify socioeconomic and demographic factors that influence members' participation in RUSACCOs and to quantify the impact of RUSACCOs on member households' food security. The study was conducted in two purposely selected *woredas* in the Amhara region one from food insecure (Lay Gayint *woreda*) and the other from food secure (Dejen *woreda*). Six RUSACCOs were selected randomly from these two *woredas*. Both qualitative and quantitative data were collected. Key informant interviews, focus group discussions and survey techniques were used to collect primary data. Collected data was then analyzed using mixed methods depending on the nature of data. For quantitative data analysis appropriate statistical models were used.

The study result reveals that the number of members in each RUSACCO is very small. However, the majority of non-member respondents are willing to join RUSACCO. Lack of information about the benefits of RUSACCO membership is the main problem why many rural poor do not join RUSACCOs. Members participate in different aspects of the cooperatives, starting from attending general assembly up to board membership. They also participate actively in saving and borrowing activities of RUSACCO. The majority of the respondents believe the RUSACCO is a vital instrument in combating food insecurity.

The empirical findings indicate that gender, marital status, occupation, educational level, participation in local leadership and participation in other income generation means determine the decision of rural poor to join a RUSACCO or not. The amount of saving is determined by household head occupation, farming experience and income level. While age of household head, primary occupation, farming experience, date of membership, annual total consumption expenditure, amount of saving and participation in other income generation activities influence members' amount of borrowing by RUSACCO members. Finally, the study confirms that RUSACCO participation improves household food security. RUSACCO membership has made positive impact on household total consumption expenditure and food expenditure.

Key words: RUSACCO, Food security, members, socio-economic and demographic factors, impact

Acknowledgments

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Abbreviations

ACCOSCA	African Confederation of Cooperatives Saving and Credit Association
ACSI	Amhara Credit and Saving Institution
ADB	Asian Development Bank
ADLI	Agricultural Development Led Industrialization
AfDB	African Development Bank
ANOVA	Analysis of Variance
ANRS	Amhara National Regional State
ATT	Average Impact of Treatment on the Treated
BoARD	Bureau of Agriculture and Rural Development
BoCP	Bureau of Cooperative Promotion
Birr	Unit of Ethiopian currency
CADU	Chilalo Agricultural Development Unit
CDI	Cooperative Development Institute
CIRIEC	International Centre of Research and Information on the Public, Social and Cooperative Economy
Co-op	Cooperative
CPA	Cooperative Promotion Agency
CPAR	Canadian Physicians for Aid and Relief
CSA	Central Statistics Agency
DECSI	Dedebit Credit and Saving Institution
ENTACCS	Ethiopian Thrift and Credit Cooperative Society
EPRDF	Ethiopian People Revolutionary Democratic Front
EUR/€	Euro (unit of the European Union currency)
FAO	Food and Agriculture Organisation
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HDI	Human Development Index

HRD	Humanitarian Requirements Document
ICA	International Cooperative Alliance
IFAD	International Fund for Agriculture Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IOF	Investor Oriented Firm
LCH	Life Cycle Hypothesis
LEDCs	Less Economic Developed Countries
LPM	Linear Probability Model
Masl	Meter above sea level
MFI	Micro Finance Institution
MoFED	Ministry of Finance and Economic Development
MoH	Ministry of Health
MPCs	Multipurpose Cooperatives
NGOs	Non-Governmental Organisations
OLS	Ordinary Least Square
ORDA	Organisation for Rehabilitation and Development in Amhara
PASDEP	Plan for Accelerated and Sustained Development to end Poverty
PIH	Permanent Income Hypothesis
PPP	Purchasing Power Parity
PSM	Propensity Score Matching
PSNP	Productive Safety Net Programme
ROSCAs	Rotating Saving and Credit Associations
RUFIP	Rural Financial Intermediation Programme
RUSACCO	Rural Saving and Credit Cooperatives
SACCOs	Saving and Credit Cooperatives
SWOT	Strengths, Weaknesses, Opportunities and Threats
TLU	Tropical Livestock Unit
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
US	United States
USAID	United States Agency for International Development
USD/$	United States Dollar (US currency)
WB	World Bank

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1. General Introduction to the Study

This chapter provides direction for the research work and it is divided into seven sections. Section one gives a general introduction and the second section, the background to the research. Section three contains statement of the problem. The objectives of the study are presented in section four while section five explains the significance of the study and section six outlines the scope of the study. Finally section seven presents the outline of thesis.

Ethiopia is one of the poorest nations in the world. In 2011, Ethiopian Gross Domestic Product (GDP) per capita adjusted with the Purchasing Power Parity (PPP) was USD 971, ranking 174th out of 187 countries in the UNDP (United Nations Development Program) human development index (HDI) (WFP, 2012). The majority of the population make a living from agriculture and reside in rural areas. The agriculture sector accounts for 42% of GDP (Gross Domestic Product), 80% of employment and 85% of Ethiopian export earnings (AfDB, 2011). However, the performance of the agricultural sector in Ethiopia has remained weak and it is heavily influenced by weather conditions (Demeke, 1999).

Ethiopia development policy is the agriculture development led industrialization policy (ADLI). The ADLI strategy prioritizes efforts to accelerate agricultural growth through the commercialization of smallholder production and stronger linkages with Ethiopia's emerging industrial sector (MoFED, 2006, 2002). Agricultural productivity in Ethiopia is very low with grain yields reported for various crops varying between 5.1 and 9.6 quintals per hectare over the 1960/61-1991/92 period (Belay, 1998); cereal yields had stagnated at about 1.15 tons per hectare in 2011 (IFAD, 2011). World weighted average cereal productivity is 2.7 tons per ha[1]. Moreover, due to rapid growth of the population the size of land per household has diminished over time. In the central and northern highlands, due to high population pressure and reallocation of farm land,

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[1] http://www.nationmaster.com/graph/agr_cer_yie_kg_per_hec25/01/2011

land holdings have decreased from 0.5 hectares per farmer in the 1960s to only 0.11 hectares per farmer in 1999 (Bechere, 2006).

Furthermore, Ethiopia is prone to recurrent droughts and floods, and these have become more frequent and severe over recent years. The extent of food insecurity has become alarming in recent years. According to the Ethiopian poverty reduction strategy paper (MoFED, 2002); in Ethiopia about 45% of the population is affected during drought years. Even during normal years, on average, over five million people have been affected by drought related factors. For instance, according to the Humanitarian Requirements Document (HRD) 2010, 5.2 million people in Ethiopia needed emergency food aid (FDRE, 2010).

Moreover, with regard to the food insecurity problem in Ethiopia, a complex combination of factors has resulted in sharply increased levels of vulnerability to food insecurity for a great number of Ethiopians. These factors include: changes in climate leading to more frequent droughts, widespread land degradation, increased population pressure, limited income alternatives and opportunities, limited access to vital services, inputs, credit and information, technological issues, poor market integration; and issues to do with national policies and implementation constraints (Devereux, 2000; Seid, 2007; and Sabates-Wheeler, et al, 2012). However, finance is a limiting factor for agricultural production in particular and rural development in general. The availability of formal financial services in rural Ethiopia is very limited because of poor infrastructure and other related problems (Gobezie, 2007).

Amhara National Regional State (ANRS) is one of the nine administrative regions of the Federal Democratic Republic of Ethiopia (FDRE). The Amhara region has been more prone to hunger related emergencies than other regions in the past and was one of the hardest hit areas in various famine periods (such as; the 1973, 1984 and more recent famines of Ethiopia (Gobezie and Garber, 2007).) According to the Ministry of Finance and Economic Development (MoFED) (2012), in terms of food poverty, the highest level of poverty in Ethiopia is observed in Amhara, where 42.5% cannot afford the minimum consumption for survival[2]. Yet in recent years, farmers, policymakers, and administrators in the region have made concerted efforts to reverse

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[2] The 2200 calories, recommended by the World Health Organisation

the problem of food insecurity. One particular effort has been to strengthen the role of rural saving and credit cooperatives.

In most policies and economic and social strategic documents of the Ethiopian government, attention is given to cooperatives. In this regard since 2003, rural saving and credit cooperatives (RUSACCOs) have flourished throughout rural Ethiopia. The RUSACCO, as one type of cooperative, focuses only on the maximisation of members' benefit. According to Gobezie (2005), RUSACCOs can play a vital role in alleviating poverty in remote rural areas of Ethiopia. Given that members' interests, and the promotion of saving and prudent use of credit, are primary considerations for RUSACCOs, it might be expected that they would perform an important role in enhancing rural food security.

Since RUSACCOs are at nascent stage compared with other type of cooperative in Ethiopian cooperative history, there has been very limited research work in this area. Especially in Amhara region, there have been no studies regarding the role of RUSACCOs in improving household food security. Therefore, studying the role and status of RUSACCOs in the region will make a significant contribution to understanding RUSACCOs impact on household food security.

1.2 Background to the Study

1.2.1 Cooperatives and Food Security

In Ethiopia, cooperative societies can be established at any level, from primary society level (village level) to federal level. According to the Ethiopian cooperative proclamation of Federal Democratic Republic of Ethiopia (FDRE) (1998, p.2), a cooperative society is defined as: "A society established by individuals on a voluntary basis to collectively solve their economic and social problems and to democratically manage the same". To support this effort, cooperative promotion agencies were established at Federal and Regional level in Ethiopia. The main task of cooperative promotion agency is to launch the extension of on-going cooperative development efforts to benefit small scale farmers and to promote the spirit of self-help community organisations as an integral part of farming communities' development. According to Bernard et al (2010, p.25), in Ethiopia in 2007, the total number of all types of cooperative was 23,084 of which 5,235 were primary saving and credit cooperatives.

In 2009, the total saving of all RUSACCOs in the Amhara region was Ethiopian Birr 14,557,711 (which is about € 856,336) and disbursed loans totalled Birr 21,037,043 (about € 1,237,473) (CPA, 2010). The gap between deposit and disbursed loan was covered by non-governmental organization.

According to the FAO (1996, p.1), "food security exists when all people, at all times, have access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life." According to the USAID food security research assessment report (2000, p.4) "individuals are food secured when they have adequate access to food, in both quantitative and qualitative terms, either by producing or purchasing it. The overall objective to achieve food security should be to increase household production and productivity."

"Food insecurity, on the other hand, connotes a temporary shortfall in adequate food for a proper diet (transitory food insecurity) as well as a long term food shortage called chronic food insecurity" (Oluwatayo, 2009, p.54). The inability of the poor to have access to needed food can be attributed to low income and food production (Mwaniki, 2006). Food insecurity is intimately linked to poverty (Molla et al, 1997). From this point of view, food security/insecurity defines a poverty line: people have insufficient food because their income falls below this line (Stage and Rekve, 1998). Improvements towards achieving food security can be measured by increasing food availability kilocalories/person/day), increasing household incomes, and improved nutritional status of children in the region (USAID, 2000).

Cooperatives have inherent advantages in tackling the problems of poverty, food insecurity and unemployment (Das et al; 2006). They are considered to have great potential to deliver goods and services in areas where both the public and the private sector have failed (Verma, 2004). According to Dubey et al (2009), cooperatives are "local institutions", that address "local needs", employing "local talent", led by "local leaders" to maximise members' benefit.

Cooperatives are based on the value of self-help[3]. Co-operatives have been noted, by the researchers in the subject area, for their role in enhancing economic activities including

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[3] http://ica.coop/en/what-co-op/co-operative-identity-values-principles 18/08/2011

agricultural production, economic development and social transformation especially in rural communities (Prakash, 2003). According to Atmiş et al; (2009, p.103), *"the fight against poverty aims to save people from living in poverty. Three tools are used to fight against poverty: Social security, self-help mechanisms, and incentives for savings. Cooperatives make it possible for people to gather and to use their collective powers for solving their social and economic problems."*

In Ethiopia starting from 1991, the EPRDF[4] (Ethiopian People Revolutionary Democratic Front) led government has attempted to mitigate the problem of food insecurity in particular, and improve the livelihood of the population in general. Towards this effort, the government of Ethiopia designed different policy measures (such as, rural development policy and strategy, food security strategy and sustainable development and poverty reduction program). Among the policy options, establishment and strengthening of cooperatives has been given much attention. For instance, under ADLI, cooperatives are considered as a vital tool for national economic development. The Federal Government of Ethiopia has identified the cooperative form of business organisation as an instrument for socio-economic change, particularly to achieve food security (Veerakumaran, 2007). Studying the impact of RUSACCO on member households' food security can help to highlight the effectiveness of government policies towards alleviating food insecurity.

1.2.2 Rural Finance and Poverty Alleviation

In spite of the significant contribution of the agricultural sector to the Ethiopian economy, it has experienced low productivity in the past decade. Likewise, with its rural population highly dependent on agricultural production, there is an immediate linkage between crop failures and household food deficit. According to the International Monetary Fund (IMF) (2004, p.60) "the absence of off-farm income opportunities coupled with the unpredictability of emergency food aid assistance has led to escalating asset depletion and increasing levels of destitution."

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[4] EPRDF is the ruling political coalition in Ethiopia. It is an alliance of the Tigryan Peoples' Liberation front (TPLF), the Amhara National Democratic Movement (ANDM), the Oromo Peoples' Democratic Organisation (OPDO) and the South Ethiopian Peoples' Democratic Front (SEPDM).

Therefore, the challenge for the Ethiopia is how to ensure a sustainable increase in income to help overcome the threat of famine and starvation.

Ethiopia is endowed with a large number of working age population and a potentially cultivatable land, although arable land is still relatively scarce in some parts of the country, especially in the northern and central highlands. However, in Ethiopia there is an acute shortage of capital especially in rural areas. Hence, rapid economic development could be realized if the country adopted a strategy that helps to raise the employability of labour resources and enhance productivity of land resources aimed at capital accumulation (Gobezie, 2008).

Major Ethiopian government reports have emphasized the importance of agricultural finance in agricultural and rural development. The Government's agricultural development strategy relies heavily on enhancing the productive capacity of Ethiopian people (labour) along with mobilization of the complementary financial resources (MoFED, 2002). Rural financial markets, especially in less-developed countries where the majority of the population base their livelihood on agricultural activities, are vital because they initiate economic growth and poverty reduction (Steel & Charitonenko, 2003).

Economic growth for developing countries is an important indicator of poverty reduction and world economic development. This has been the goal of world financial institutions such as the World Bank and the IMF (Sapkota et al, 2008). The establishment and expansion of financial services is one of the instruments to break the vicious cycle of poverty (Lokesh, 2012). Financial services help farmers to implement improved technology that can improve agricultural production and productivity. Generally, the accessibility of financial services is considered as one of the engines of economic development (Bose, 1998); financial institutions have been regarded to be the core mode of economic development (Sapkota et al, 2008). Food security depends on the extent to which households can increase their farm production and diversify their sources of income (Castro, 2000). Improved access to non-farm sources of income is likely to be good for household welfare, including food security (Holden et al, 2004).

In Ethiopia, the rural financial landscape essentially remains predominantly informal (Gobezie, 2008). According to the International Fund for Agriculture Development (IFAD) (2011), in rural Ethiopia around 15% of the rural poor in Ethiopia have access to savings and credit services. In

addition, only deposit taking MFIs and RUSACCOs are the major sources of finance for the rural population to support agricultural growth as well as rural employment opportunities. According to Yelewem Wessen (2008), in the Amhara region, only 25%-30% of the potential demand for microfinance is estimated to be filled. Therefore, "the informal financial sector has been, and will for a long time remain, the last hope for credit acquisition by inhabitants of developing countries" (Oluwatayo, 2009, p.54). This is due to the ease of obtaining loans from informal source and the less onerous collateral requirements.

Informal financial institutions in Ethiopia are entities operating outside the domain of the National Bank of Ethiopia (ILO, 2002). The informal finance sector includes the commercial moneylenders and the traditional system or ekub[5]: a system of saving through which people raise capital to invest in simple businesses in order to improve their economic positions. Relatives and friends are other traditional sources of finance.

Rural poor people in Ethiopia have limited access to financial services from formal financial institutions. This is due to low infrastructure, highly dispersed nature of rural settlements that often increases the information collection and transaction costs of commercial banks, high collateral requirement and lack of adequate management system of formal financial institutions. Therefore, in rural Ethiopia it is the deposit taking MFIs (microfinance institutions) and rural saving and credit cooperatives that can do the job in a sustainable way for the poor (Amha, 2008, p.3).

1.3. Statement of the Problem

Active membership in cooperative activities has been described as a veritable way of reducing the impact of poverty on rural households (Oluwatayo, 2009). According to Bernard et al (2008, p.7), "in Ethiopia, most cooperatives were initiated under the impulse of an external partner: 63% were created by government institutions, 11% by donor agencies or NGOs, and only 26% by members themselves." Because of low involvement of members in decision making, the

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[5] Ekub is a communal type of saving arrangement whereby people raise capital for their business (ROSACO).

members themselves looted and dismantled their organisation immediately at the fall of the past socialist government.

Rural saving and credit cooperatives are relatively recent phenomena in Ethiopia. In Ethiopia, SACCOs designated as semi-formal financial institutions. They are outside the control of the central authorities with respect to ownership of assets and management; however, they are regulated by a cooperative promotion agency known as the Federal Cooperative Promotion Agency. Prior to 2003, saving and credit cooperatives were almost entirely urban based with membership largely drawn from salaried employees and generally people who share a common purpose and locality (Pitamber, 2003). As the poor typically rely on expensive informal credit to finance their day to day activities, they may systematically earn a lower return from their investment and thereby be on a slower wealth accumulation path than the rich who borrow in formal markets (Conning and Udry, 2007). The primary task of any cooperative is to serve the economic needs of its members. If this is not done, there is no role for cooperatives.

Since 2003, with the support of the International Fund for Agricultural Development (IFAD), the Ethiopian government has tried to establish and strengthen rural saving and credit cooperatives. According to the Amhara National Regional State Cooperative Promotion Agency (2009) in the Amhara Region in 2003, the number of rural saving and credit cooperatives was only 10. By 2009, the number of saving and credit cooperatives rose to 179 with a total membership of 41, 416 (on average 231 households per SACCO) of which 29.85% were female.

According to the Amhara region cooperative promotion bureau, the operational area of each RUSACCO is a *Kebele*[6] administration. In each rural *Kebele* administration, there is only one RUSACCO. In a *Kebele*, the average number of rural households is 1,000 (Gobezie, 2005). Though the cooperatives are seen as the basis for poverty reduction at household level, and the government provides various incentives and encouragements to people to join cooperatives, there are still some rural people who do not join rural saving and credit cooperatives. According to CPA 2011 report on average, 23.1% of rural people have already joined RUSACCOs. But in the

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[6] The *Kebele* Administration (Peasant Association) is the lowest Government administrative unit, and covers on average 5,000 people (1000 households).

Amhara region no studies of RUSACCOs have explored the factors that influence RUSACCO membership and their level of participation in different affairs of cooperatives.

Ethiopian government and development partners believe that rural cooperatives can play a vital role in promoting sustainable rural development and ensuring food security. According to Tenaw & Islam (2009, p.112) "Co-operatives can play a significant role in the promotion of food security in sub-Saharan Africa if they are rooted in communities and respond to their members and the interests of those communities." Government and other development partners should know the real impact of cooperatives in rural food security. However, there is little or no research on the contribution of RUSACCOs to member household food security in the Amhara region in particular.

One of the most important policy and research questions regarding financial institutions is often phrased in terms of how access or improved access to financial service translates into a change in household outcomes such as agricultural output, income, food security, etc (Diagne et al, 1997). In Ethiopia, failure to consider how cooperatives benefit in micro financing and very limited research and innovations in the micro finance industry are among the identified problems of microfinance development (IFAD, 2009).

From the development research perspective, understanding the determinants of participation of the rural poor in rural financial institutions and assessing their impact on members'/ users' livelihoods is of vital importance.

This study was designed to address the impact of RUSACCO on member households' food security in the Amhara National Regional State (ANRS) of Ethiopia.

1.4. The Objectives of the Research

This study analyzes the determinants of membership of and participation in RUSACCOs. It further aims to quantify the impact of RUSACCOs on member households' food security. Therefore the specific objectives of this study are;

1. To compare members and non-members of RUSACCOs in terms of a number of socioeconomic and demographic variables.

2. To identify the socio economic factors that affect members' participation in RUSACCOs.

3. To examine the impact of RUSACCOs on member households' food security.

1.5. Significance of the Study

There has been no in-depth study to assess the role of saving and credit cooperatives in enhancing food security in rural Ethiopia. Thus, this study will play a significant role for unfolding issues that cooperative promotion agencies are pondering. Policy makers may utilize the result of this research work to design policies to improve the performance of cooperatives.

This study will provide valuable insights for policy makers and the cooperative community about the impact of RUSACCOs' on member households' food security. Non-governmental organisations (NGOs) and other related development partners of the region may also utilize the results in their effort to alleviate food insecurity and other developmental problems. Moreover, the RUSACCO's may use the results of this research to improve the effectiveness as well as the efficiency of the cooperatives. Identification of the determinants of membership by the rural poor and the level of participation of members in activities will help RUSACCOs to design their own strategies to increase the number of members and their level of participation. This study will also add to the existing understanding in the literature on the role of SACCOs in achieving household level food security.

1.6. Scope of the Study

In the study areas, there were no base line statistics that indicated the socioeconomic condition of members before the establishment of RUSACCOs. Therefore, this study utilized cross sectional data (which means observation of different individuals (subjects, objects) at a given time). Due to limited time and financial resources, the study covers only two purposely selected *woredas* of

the Amhara region. As its name signifies, rural saving and credit cooperatives are financial cooperative that operates in rural settings and this study focused on the rural areas of selected *woredas* of the Amhara region. However, rural areas of the region in particular and Ethiopia in general share similar socio economic and demographic realities. In addition, these selected *woredas* are expected to represent the two categories of *woredas* in the region in terms of food security (food secured and food insecure *woredas* of the region). Therefore, the findings of the research may show the realities of RUSACCOs throughout the region.

1.7. Outline of the Thesis

In addition to the introduction, the thesis has nine chapters. Chapter two reviews key literature in the concept of cooperatives. The main objective is to acquaint readers with the concepts of cooperative, its principles and ideas of saving and credit cooperatives.

Chapter three reviews the concepts of household food security and impact of micro finance on household food security.

Chapter four focuses on the conceptual framework. It assists in providing information about the theoretical relationship between food security and rural saving and credit cooperatives.

Chapter five explains the research methodology used. The objective of this chapter is to provide information about the study area, types and sources of data, method of data collection, sampling technique and method of data analysis.

Chapter six presents an overview of Ethiopian cooperative history in general and in the Amhara national region in particular. This chapter focused on Ethiopian cooperative development history with special emphasis on rural saving and credit cooperative movement in the Amhara National Regional State.

Chapter seven presents RUSACCO membership. This chapter presents the reasons for the establishment of RUSACCOs, why some rural poor join and others do not and also the socioeconomic and demographic determinants of RUSACCO membership.

Chapter eight reports the participation of RUSACCO members in different activities of RUSACCOs. The main area of RUSACCO activities concentrated on was members'

involvement in decision making, training activities, patronage refunds and saving and credit services.

Chapter nine presents the impact of RUSACCOs on member households' food security. This chapter examines whether such involvements in different activities of RUSACCOs have a positive impact on members' livelihood in general and food security in particular. Finally, chapter ten summarizes the results of the whole study, draws conclusions and presents some recommendations for policy makers and future researchers on the subject.

CHAPTER TWO

COOPERATIVES AND THEIR IMPACT ON MEMBERS' LIVELIHOOD

2.1 Introduction

This chapter presents a review of the definitions and concepts of cooperatives, a brief history of saving and credit cooperatives, and a description of participation in cooperatives, determinants of participation, and impacts of cooperatives.

2.2 Definition and Concepts

In 1995, the International Co-operative Alliance (ICA), the apex organisation that represents cooperatives worldwide, defined a cooperative as:

"An autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise." (Mazzarol, 2009, p.17)

The ICA definition recognizes the essential element of cooperatives: membership is voluntary. True cooperation with others arises from a belief in mutual help. In true cooperatives, persons join voluntarily and have the freedom to leave the cooperative at any time (Zeuli and Cropp, 2004).

Cooperatives are defined by the values and principles under which they operate.

"They are "based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity" (Chavez, 2003, p.214).

Cooperatives can be primary or higher forms (Unions, Federations, Apex) and specialized ones like cooperative banks and insurances. Peculiar characteristics of cooperatives emanate from the very concept of cooperatives and the principles they are required to follow.

A cooperative is a collectively-owned firm established to further the well-being of its members (Hanisch, 2005, p.3). These definitions emphasize that cooperatives are independent of

government and not owned by anyone other than the members. Cooperatives are not only associations of persons but also legal organisations (Birchall, 2004, p.6).

Birchall (2003, p.3) states,

> *"cooperatives are associations of individual people or 'legal persons', organisations that may themselves have members. This means that federal bodies whose members are primary co-operatives can also be co-operatives, and that small businesses can also be members of their own cooperatives."*

Cooperating with others has often proven to be a satisfactory way of achieving one's own objectives while at the same time assisting others in achieving theirs (Hancock, 2009). In general, cooperatives contribute to socio-economic development (Birchall, 2004, p.15). A cooperative is a business organisation established to improve the overall well-being of the members (Reynolds, 2014, p.6).

According to Sumelius and Tenaw (2008, p.109) "co-operatives have voluntary and open membership, democratic member control, and economic participation on the basis of membership rather than size of investment, autonomy and independence. Since they are user-owned businesses they need to make a commitment to the education and training of their members. They share similar values and because of this they are expected to cooperate with each other. Though they are established for the benefit of their members, they also have responsibility to serve their wider community."

Cooperatives around the world generally operate according to the same core principles and values, adopted by the ICA (International Cooperative Alliance) in 1995. Cooperatives trace the roots of these principles to the first modern cooperative founded in Rochdale, England in 1844. The following are the principles of cooperatives (Zeuli & Cropp, 2004, p.45);

Table 2.1: Principles of cooperation

Number	Principle	Description
1	**Voluntary and Open Membership**	Cooperatives are voluntary organisations, open to all people able to use its services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination
2	**Democratic Member Control**	Cooperatives are democratic organisations controlled by their members, those who buy the goods or use the services of the cooperative, who actively participate in setting policies and making decisions.
3	**Members' Economic Participation**	Members contribute equally to, and democratically control, the capital of the cooperative. This benefits members in proportion to the business they conduct with the cooperative rather than on the capital invested.
4	**Autonomy and Independence**	Cooperatives are self-help autonomous organisations controlled by their members. If the cooperative enters into agreements with other organisations or raises capital from external sources, it is done so based on terms that ensure democratic control by the members and maintains the cooperative's autonomy.
5	**Education, Training and Information**	Cooperatives provide education and training for members, elected representatives, managers and employees so they can contribute effectively to the development of their cooperative. Members also inform the general public about the nature and benefits of cooperatives.
6	**Cooperation among Cooperatives**	Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.
7	**Concern for Community**	While focusing on member needs, cooperatives work for the sustainable development of communities through policies and programs accepted by the members.

There are different types of cooperative (such as agricultural cooperatives, fishery cooperatives, mining cooperatives, financial cooperative, etc) in different parts of the world. Financial cooperatives are institutions that have grown up from the base and are therefore organised in close proximity to the communities they serve. According to Cuevas and Fischer (2006), financial cooperatives include diverse member owned financial institutions such as savings and credit cooperatives, credit unions, and cooperative banks that differ across regions of the world.

They have an explicit mission to keep funding, distribution of benefits, and responsibility and accountability in local users' hands (Stafford, 1990).

According to Berthoud and Hinton (1989), saving and credit cooperatives are cooperative societies that offer loans to their members out of the pool of savings that are built up by the members themselves. Croteau (1963) described saving and credit cooperatives as the purest form of co-operative due to their unique ownership status (member's owned and used). According to Ward & McKillop (2007, p.1) "they serve only an identifiable group of clients which means that transactions are restricted to members; restrictions are also placed on the membership by requiring that members belong to a common bond. This common bond or interest is usually multiple, associational, occupational or residential. The requirement to belong to a common bond is seen as a corner stone in the success of these usually high-risk credit cooperatives (because as a financial institution it may encounter financial risk), as the social pressure that is created by the members knowing each other can minimise the risk of default."

According to Whyley et al (2000, p.14) saving and credit cooperatives established with two main objectives: to promote saving among people on low incomes and to provide access to low-cost credit. The objectives are,

1. promotion of thrift among members through the accumulation of savings;
2. creation of sources of credit for members at a fair and reasonable rate of interest;
3. use and control of members' savings for their mutual benefit; and
4. education and training of members in the wise use of money and in the management of their financial affairs.

Saving and credit cooperatives bring financial services to a broad rural poor population in both developed and developing countries. The organisation is registered as a cooperative, is owned by its members, and follows a one-member, one-vote principle. According to WB (2007, p.9), in developing countries, *"primary-level financial cooperatives typically start as small organisations, based in a village or workplace. In the beginning, they are usually managed by members on a voluntary, part-time basis, and provide only savings and basic loan products. Lending is financed by the pool of members' savings."* The members' liability is limited to the value of their shares.

Savings and credit co-operatives (SACCOs) can be designated as semi-formal financial institutions (Aredo, 1993). They are outside the control of the central authorities with respect to ownership of assets and management. As a semi-formal financial institution, the SACCO can establish a link between the informal and formal sector. Such a link can benefit both rural clients and banks because it can reduce transaction costs substantially (Sethykun, 2011).

2.3. Saving and Credit Cooperatives in the World

As it was mentioned earlier in this chapter that saving and credit cooperatives have been developed to meet the fundamental human need to find an equitable way of saving and borrowing.

Across the world, saving and credit cooperatives play a significant role for their members in particular, and in the economy in general. For instance, "the French Credit Agricole is the largest bank in the world outside of Japan; the German peoples' banks have over 28% of the savings market, Rabobank Netherlands 25%" (Birchall, 2004, p.10). Ireland has a strong credit union movement, with 2.9 million people in membership and total savings approaching € 11.9 billion.[7]

Even if the history of SACCO societies shows that they were formed initially for alleviation of poverty among the poorer economic classes like in Germany, UK, United States and India, they were not that much promoted in rural areas of developing countries. However, in recent years, in developing countries (e.g. Ethiopia), the potential of member owned saving and credit cooperatives (SACCOs) as a tool for poverty alleviation has been increasingly recognized (Mergia, 2006).

For instance, the SACCO sector is the second largest (next to agricultural cooperatives) cooperative sector in many African countries such as Nigeria and Niger in the West Africa, Rwanda and Kenya in Central and East Africa. In Kenya, they are financially the strongest (Wanyama et al, 2009). Likewise, a study by Ogisi et al (2007) in Nigeria concluded that financial cooperatives play a significant role in the growth and development of small scale

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[7] http://www.creditunion.ie/whoweare 10/04/2011

enterprise. In Kenya, financial cooperatives reach 30% of the rural population with a broad range of products (WB, 2007).

Recent research in developing countries reveals that SACCOs promote a savings culture amongst their members (Ahimbisibwe, 2007). This is crucial because increased savings increases capital accumulation and hence investment which leads to increased employment, and hence increased incomes, thus breaking the vicious cycle of poverty.

2.4 Participation in Cooperatives

2.4.1 Definition, Types and Benefits of Participation

Participation is a rich concept that varies in its application and definition. The way participation is defined also depends on the context in which it occurs. "For some, it is a matter of principle; for others, practice; for still others, an end in itself" (WB, 1996, p.xi). Although numerous researchers have attempted to clarify the term "participation," a variety of disparate definitions exist. Among the more commonly used are; influence sharing (Mitchell, 1973), joint decision making (Locke and Schweiger, 1979), and degree of employee involvement in decisions (Monge and Miller, 1988).

The World Bank Learning Group on Participation defined participation as mentioned by African Development Bank (AfDB) (2001, p.2) as:

> *"a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them".*

From this definition, participation could be seen as the level of consultation or decision making in all phases of a project cycle, including needs assessment, appraisal, implementation, monitoring and evaluation (Gaventa and Valderrama, 1999).

Birchall (1999, p.4) revealed three types of participation in cooperatives:

1. First by taking part in decision-making in the cooperative; which incorporates decisions related to all the democratic aspects of a cooperative: attendance at general meetings, becoming a committee member, forming sub-committees and so on.

2. Second by carrying out tasks that further the cooperative's aims; includes all unpaid activities that members volunteer for.

3. Third by taking part in the social life associated with the cooperative; participation also has the attraction of being accessible to those who find meetings difficult or unattractive, and it utilizes skills members often already have in organising cultural and fund-raising events.

Birchall's, classification of participation focused only on cooperative governance and social interaction. Members also participate in the economic activities. In other words, members should use the services of the cooperatives, in the case of financial cooperatives, saving, lending and other services (USAID, 2006).

Agrawal (2001, p.1624) also identifies six levels of participation (i.e., nominal, passive, consultative, activity specific, active and interactive (empowering) participation). Nominal and passive participation are more or less at very low levels of participation, consultative and activity specific at medium levels of participation and active and interactive participation at higher levels of participation.

According to Atmiş et al (2009), social development advocates argue that real and direct participation in social development is needed for both instrumental and developmental reasons. Midgley (1986, p.8) states that community participation serves immediate instrumental goals such as the identification of felt needs as well as the mobilization of local resources. However, community participation also promotes broader social development ideals: by participating fully in decision making for social development, ordinary people experience fulfilment which contributes to a heightened sense of community and a strengthening of community bonds.

According to White (1996, p.145), there are four forms of participation (nominal, instrumental, representative and transformative). From a managers'/leaders' perspective, nominal participation can help to legitimize the group. Members see themselves as members of the group but rarely attend any meetings. Instrumental participation typically facilitates society involvement to reduce operational cost and generate efficiencies. Representative participation function differs in that it offers various opportunities to the society to 'voice' their concerns on the character of the project. Transformative participation allows participants to control the 'means and ends' for co-decision and co-ownership of society projects.

A lot of research about participation has been conducted over the past years on participation in cooperatives (McCarthy, 2005). Most of these studies showed that participation is one of the critical components of the success of cooperatives. It has been associated with increased empowerment of the poor and disadvantaged and strengthened capacity of people to learn and act (Pretty, 1995).

As a result of these studies on participation, the term is now a part of the normal language of many development agencies, including NGOs, government departments and banks (Pretty, 1995). Although all these organisations interpret and use the term 'participation' in distinctive ways, there are some similarities when the narrowest form of participation is used and there are similarities when the broadest form is used. The narrowest form of participation in a group is defined in terms of nominal membership (Pretty, 1995). Hence, people are members of the group, but rarely attend any meetings. From time to time members enrol to see if anything changed (White, 1996). In its broadest form, it is described in terms of a dynamic interactive process in which disadvantaged people have a voice and influence in decision making (Agarwal, 2001).

Member participation in cooperatives should start from initial inception. An element forming rural cooperatives is voluntary and active participation of villagers (Coelho & Favareto, 2008). "The aim of cooperative formation is to offer an opportunity for local people to take development into their own hands and make it a meaningful concept at the local level. Cooperatives have arisen, too, where the cost of adjustment to economic change has threatened to destroy communities, where local people needed power to control the pace and direction of change in order to preserve what they valued" (Sumelius & Tenaw , 2008, p.109).

Participation is the cornerstone of forming cooperatives and active participation of members leads to an increase in investors' interest in the cooperative (Defourney et al, 1985). Members should actively participate in cooperative governance and also participate in economic activities (buying shares, purchasing inputs, deposits and credit, etc). In cooperatives, members may participate in three main cooperative governance bodies, attending general assemblies, holding a position on the board of directors; and holding a position on the executive board (Pozzobon, 2011).

If cooperatives are to remain democratic and responsive, participation of members is essential (Birchall, 1999). Likewise, participation is vital for the cooperatives to continue, and the members should always be reminded that they have a great wealth, and their participation generates profit and success for cooperatives (Wadsworth, 2001). Rural cooperatives can encourage farmers to participate, and solve their trade and social problems.

According to Gray & Kraenzle (1998), a cooperative is worthless without member participation. For instance, Sexton & Iskow (1988) showed that one of the reasons for cooperative failure in Ethiopia in the 1980s was the lack of member participation as well as poor management. According to Spielman et al (2008), the majority of cooperatives in Ethiopia displayed a high degree of upward accountability, i.e., to the *woreda* office of the BoCP[8] (Bureau of Cooperatives Promotion) and BoARD (Bureau of Agriculture and Rural Development). This likely stems from a long history and tradition of top-down rural administration and state-led cooperative promotion and management. However, it is commonly accepted that the role of government in cooperative affairs should be restricted to four functions: legislation, registration, dissolution/liquidation, and monitoring the application of the law by the cooperatives (Henrÿ, 2005).

2.4.2 Determinants of Participation

2.4.2.1 Membership of cooperatives

Membership participation is a very important determinant of successful cooperatives, yet effective membership in cooperatives is a function of their alignment with people's interests and provision of services that are required by members. Therefore, the success of cooperatives, especially in developing countries, depends on whether they are founded on the people's interests and provide relevant services to the people's needs to attract active and effective membership participation (Wanyama, 2012).

Generally, researchers have paid little attention to the question of what motivates people to join economic organisations (Jones et al, 2009). On the other hand, according to the International

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[8] The previous responsible body for cooperative facilitation and regulation in Ethiopia at regional level, however currently it is called Cooperative Promotion Agency

Cooperative Alliance (ICA) 2004, half of the world's population was made secure by co-operative enterprise. Implying that, co-operatives are significant institutions across the world.

Socioeconomic research and theory tends to suggest that socioeconomic and demographic characteristics (e.g., age, gender, and education) may be important determinants of participation (Atmiş et al, 2004, Baticados, 2004 and Wright & Shindler, 2001). Many researchers tried to investigate the determinants of membership in different types of cooperatives. For instance a study by Grace (2011) in Rwanda showed that farmers join dairy cooperatives to get access to the market, for poverty reduction, because they wanted to work with others, because they wanted to learn from others, due to government advice to join, because of the need to access services and to get additional sources of income. Similarly, Kimuyu's (1999) study on ROSCAs in Kenya and Tanzania shows that a significant association exists between participation in ROSCAs and household size, with the proportion of participating households being greater for medium and larger households relative to those that are smaller.

A study in South Eastern Anatolian Region of Turkey using binary logit by Karlı et al (2006) revealed that the probability of membership in agricultural cooperatives declines with increases in age, household size, gross income, farm size-squared, and higher technology used. The farmers' probability of membership grows with increases in education level, greater farming experience, stronger communication level with cooperatives, medium technological level and farm size.

A similar study in Nigeria by Agbo (2009) observed that most respondents did not know about cooperatives and that those that knew saw cooperatives as government outfits and not autonomous business organisations. Another study conducted in South Africa by Chibanda et al (2009) showed that farmers join cooperatives for the following reasons; (i) they needed community development, (ii) they created employment, (iii) affirmative action, for example they wanted to provide employment to disadvantaged women and orphans, and (iv) to provide food security for the members' families.

A study by Spielman and Bernard (2008) in Ethiopia indicated that farmers did not join the cooperatives because ; (i) they didn't know if the cooperatives could benefit them, (ii) some people were not being accepted into the cooperative while (iii) others preferred to wait and see if

the cooperatives could benefit them so that they could join, (iv) they were afraid to invest in the cooperatives because they were not sure if they could get their money back, (v) they had issues of trust in the organisation, (vi) they lacked awareness about the cooperatives, (vii) some reported not having land in the area where the cooperative was located and lastly (viii) some farmers re-ported that they did not have money to meet membership requirements.

On the other hand, Mahmud (2008) studied the participation of members in the multipurpose cooperatives in the Eastern Tigray zone, using the tobit model. The study showed that the probability of participation and intensity of participation of rural poor in cooperatives appear to be significantly and positively influenced by education level, gender, age, off-farm income, size of livestock, access to input credit, membership status, number of paid up share capital, access to alternative marketing opportunities and members' satisfaction; while the influence of members' age, access to alternative market and off-farm income had a negative relationship and significance in determining the level of members' participation.

A similar study by Nugussie (2010), in the Tigray region of Ethiopia, identified the reasons why some rural people become members of agricultural cooperatives while others do not, using the probit model. According to Nigussie's study, the variables that strongly and significantly induced rural people to join agricultural cooperatives were being a male household head, family size, family members in secondary school, membership in rural associations, attending public meetings and/or workshops; membership in *woreda* administrating committees, exposure visits and training access, accessibility to credit services, and information access.

These studies clearly show that socioeconomic and demographic factors significantly affect membership in cooperatives are different depending on the country context and the type of cooperatives. Moreover, one cannot generalize that participation of poor people in agricultural cooperatives for example is similar to that of saving and credit cooperatives. In addition, the majority of research work to date is on agricultural cooperatives. No research work, especially on rural saving and credit cooperatives in this regard in the Amhara region of Ethiopia has been carried out to date. Saving and credit cooperatives are the second largest cooperative in the region. Thus, identifying the determinants of RUSACCO membership in the Ethiopian RUSACCO context is vital.

2.4.2.2 Participation of members in savings and credit activities

RUSACCOs should be committed to the achievement of rural socio-economic development through enhancing member savings, and making available cost effective and convenient credit to members, because the basic aims of RUSACCOs are developing members' saving culture and provision of credit at a fair and reasonable interest rate.

2.4.2.2.1. Determinants of saving

There are three prominent theories related to the determinants of saving. Keynes identified absolute disposable income as the important determinant of saving (Pailwar, Kaur, Saxena, & Nijhara, 2010). Two other traditional theories are Friedman's Permanent Income Hypothesis (PIH) and Modigliani's Life Cycle Hypothesis (LCH). These explain that other variables also affect the saving of households. PIH differentiated between permanent and transitory income and indicated that saving is influenced by both permanent and transitory income as well as the present level of wealth, both human and non-human. As per the Modigliani LCH, the main reason for saving is to meet expenses after retirement and to gain wealth. Thus, the age of household head plays an important role in saving behaviour (Pailwar, et al, 2010).

The saving habit of the rural poor depends on socio economic variables. For instance, Komla (2012) revealed various demographic characteristics that exert influence on the savings behaviour of rural households in varied ways. Savings are measured at the household level, and demographic variables play an important role in determining saving behaviour (Rogg, 2006). According to Ayanwale and Banire (2000), the saving behaviour of farmers in developing countries is less dependent on the absolute level of aggregate income, and more dependent on other factors such as household size, and demographic factors such as age and wealth. Horioka (2007) shows that demographic factors may also interact with household behaviour to increase saving.

A study in China by Zhu (2004) found that the household size, farm-land, ownership of non-productive assets and income of peasant workers had a negative impact while impact of households with peasant workers in collective township village enterprises had a positive impact on savings. Likewise, a study in Taiwan by Athukorala and Tsai (2003) identified income

expansion, aging of the population, changes in social security contributions, and the availability of institutional credit for households as other significant determinants of saving. However, in both studies the focus was not on the identification of cooperative members' saving determinants but on township village enterprise capital accumulation; and merged together, public, corporate and household savings in saving analysis respectively.

A similar study by Akpan et al (2012), showed that job, education level and membership of a local association have a significant positive effect but household size has a significant negative effect on saving by rural agro-based workers in the south-south region of Nigeria. Although 77% of the respondents in that study belong to the local cooperative society, the rest were non-members.

Likewise, in Kenya Nakuru district, a study by Kibet et al (2009) using OLS regression, found that household income, occupation, gender, and the education level of the household head positively influenced the saving behaviour of the rural households in the Nakuru district, while credit access, age, and dependency ratio negatively influenced household saving. Similarly, in this study the effect of cooperatives and other institutions were not clearly isolated.

Uneze (2013) studied the determinants of savings in cooperatives by farmers of agricultural group lending schemes in Anambra state, Nigeria. The study indicated that the age of the household head, the value of assets, off-farm income, and the total value of farmers' loans significantly affected deposit mobilization in cooperatives by farmers. The age of the household head and the off-farm income had a negative relationship whereas the total value of farmers' loans and the value of assets had a positive relationship with savings in cooperatives. Moreover, members' saving mobilization within their cooperatives was very small.

Babatunde et al (2007) studied the socio-economic and saving patterns of cooperative farmers in Nigeria. They found that the year of joining the cooperative, household size, interest paid on loans, amount of money borrowed and gender were significant variables that determined the amount of saving by farmers. Among significant variables only the amount of money borrowed and household size were negatively related to savings and the rest were positively related with the amount of saving.

On the other hand, Bime and Mbanasor (2011a) studied the determinants of informal savings amongst vegetable farmers in Cameroon. Their study showed that age, household size, interest paid, gender, income, farm size, education and distance were the significant socio-economic variables that significantly affect farmers' informal savings. According to this study, gender, household size and age were negatively related whereas interest paid, income, farm size, education and distance were positively related with the amount of informal saving. However, this study was fully focused on informal savings.

A similar study in the Tigray region of Ethiopia by Tesfamariam (2012) indicated that the main reasons for members' saving within their RUSACCOs were: to obtain loans (29.17%), for security (19.17%), for emergencies (18.33%), for housing (10%), to purchase appliances (11.67%), for future commitments (7.50%), and for education (4.16%). Tesfamariam finding also indicated that savings mobilized by members were positively related with farm size, length of membership, household annual income, livestock holding, and the amount borrowed. On the other hand, the age of the member, distance to the RUSACCO, education level, household family size, and household expenditure were statistically significant but negatively influenced savings by members.

Table 2. 2: Summary of determinants of amount of saving

Variables	Positive	Negative	Author/s
Gender	X[1]	X[2]	Kibet et al[1], 2009; Bime and Mbanasor,[2] 2011a
Age		X	Kibet et al, 2009; Uneze, 2013; Bime and Mbanasor 2011a
Household size		X	Zhu, 2004; Akpan et al, 2012; Babatund et al 2007; Bime and Mbanasor, 2011a; Tesfamariam, 2012
Farm-land	X[1]	X[2]	Zhu[2], 2004); Bime and Mbanasor,[1] 2011a; Tesfamariam[1], 2012
Ownership of non-productive assets		X	Zhu, 2004
Income	X[1]	X[2]	Zhu[2], 2004); Bime and Mbanasor,[1] 2011a; Tesfamariam,[1] 2012
Educational level	X[1]	X[2]	Akpan et al[1], 2012; Kibet et al[1], 2009; Bime and Mbanasor,[1] 2011a; Tesfamariam,[2] 2012
Job/ Occupation	X		Akpan et al, 2012; Kibet et al, 2009
Membership of a local association	X		Akpan et al, 2012
Off-farm income		X	Uneze, 2013
Total value of loans	X[1]	X[2]	Uneze,[1] 2013; Babatund et al,[2] 2007; Tesfamariam,[1] 2012
The value of assets	X		Uneze, 2013
Year of joining the cooperative	X		Babatund et al, 2007; Tesfamariam, 2012
Interest paid on loans	X		Babatund et al, 2007; Bime and Mbanasor, 2011a
Distance	X[1]	X[2]	Bime and Mbanasor,[1] 2011a; Tesfamariam,[2] 2012
Household expenditure		X	Tesfamariam, 2012
Livestock holding	X		Tesfamariam, 2012

Remark: [1] Positively related with amount of saving & [2] Negatively related with the amount of saving.

From the review one can understand that there are various socioeconomic and demographic factors that affect members' saving. The influence of some variables on members' amount of saving was not the same. For instance, Kibet et al (2009) found that there was a positive relationship between educational level and members' saving, whereas, Tesfamariam's (2012) similar study revealed there was negative relationship between educational level and members' saving). The variation was attributed to differences in socio-cultural, agro-ecological, natural resource endowment, geographical location etc of a given region or country and among different groups of a community. This implies that research work in this area is not conclusive. On the other hand, from a development research perspective, identifying the basic determinants of household savings in RUSACCO is one important topic.

2.4.2.2.2. Determinants of loan

The second vital activity of RUSACCOs is members' loans. Identifying the determinants of RUSACCO members borrowing from their cooperative is very important from both an academic and policy perspective. Because identification of the determinants of borrowing can help to widen the knowledge in the area and to design appropriate RUSACCOs' lending policies.

Akpan et al (2013) study identified the factors that influence poultry farmers' demand for loans in Akwa Ibom State of Nigeria. According to their findings, farmers' age, membership of a social group and farm size are positive and statistically significant with respect to the decision or probability to access credit by poultry farmers in the study area. On the other hand, coefficients of gender, household size, extension agent visit and distance from farmer's residence to the lending source are negatively related and statistically significant with respect to the decision to access credit by farmers.

Acquah & Addo (2012) study indicated the socio economic determinants of rice farmers' loan size in Ghana. The result of the study reported that there was a positive relationship between annual income and loan size. Moreover, the sign of other selected variables (like education level and experience of farming) were positive. The study focused on only one part of the farming population and used a very limited number of socio economic variables.

The Nwaru et al (2011) study identified the determinants of informal credit demand and supply among food crop farmers in Akwa Ibom state of Nigeria. Their findings identified; education,

interest rate, farm income and profit as significant factors that affect the credit demand of farmers. Among these significant factors, only the interest rate was negatively related. The rest of the significant variables were positively related with credit demand. Though the study identified some important factors (such as; education, interest rate, farm income and profit) that affect the demand for credit, it was fully focused on informal credit demand.

Heneri et al's (2011) found that in South East Nigeria, from seven selected socio-economic variables, age of farmers, level of education, farming experience and farm size were positively related to loan size. However, marital status was significant but negatively related with loan size. In addition, Gandhimathi & Vanitha (2010) studied the determinants of the borrowing behavior of farmers in Coimbatore district of India. They reported that those farmers, who have bigger land holdings and higher costs of production, prefer borrowing from commercial banks than cooperatives. Finally, Oboh & Kushwaha's (2009) study in Benue State, Nigeria revealed that farm size and income were the significant factors that positively affect the size of loan.

A similar study by Kedir et al (2007) utilized the tobit model to assess the determinants of loan amounts in different parts of Ethiopia. According to their work, age, value of assets, and number of children were significant factors in determining the amount of loans in urban Ethiopia. In this study, farm experience, which is a proxy for work age, was also significant.

Table 2.3: Summary of determinants of amount of borrowing

Variables	Positive	Negative	Author/s
Age	X		Akpan et al (2013); Heneri et al's (2011); Kedir et al (2007)
Gender		X	Akpan et al (2013)
Family size		X	Akpan et al (2013); Kedir et al (2007)
Farm size	X		Akpan et al (2013); Heneri et al's (2011); Oboh & Kushwaha's (2009)
Educational level	X		Acquah & Addo (2012); Nwaru et al (2011); Heneri et al's (2011)
Annual income	X		Acquah & Addo (2012); Nwaru et al (2011); Oboh & Kushwaha's (2009)
Membership of a social group	X		Akpan et al (2013)
Farming Experience	X		Acquah & Addo (2012); Heneri et al's (2011)
Interest rate		X	Nwaru et al (2011)
Distance		X	Akpan et al (2013)
Profit	X		Nwaru et al (2011)
Marital status		X	Heneri et al's (2011)

From this review, one can summarize that there are various socio-economic and demographic factors that affect members' size of loan. However, the influences of some variables were positive (such as; age, level of education, farm size, farming experience, and annual income) whereas the influence other variables were negative (such as; gender, distance and interest rate).It was found that studies on the determinants of loan size from RUSACCO have been very

limited and inconclusive. On the other hand, research on the determinants of member borrowings from their RUSACCO is important for policy as well as for development research perspectives.

2.5 Impacts of Cooperatives on Poverty and Food Security

Many researchers have indicated that cooperatives, especially rural cooperatives, have a lot of positive impacts including: low cost of doing things (such as; marketing agricultural products, supplying agricultural inputs, etc.) compared to when people act individually, higher performance and productivity, access to newer technology and to information and knowledge resources (Ackerman & Kenrick, 2009; Kosfeld & von Siemens, 2011). The advantage of cooperatives over other forms of organisation in rural settings is decentralization of decision making and local generation and distribution of wealth. The very nature of the organisation empowers rural people and their communities. The impact of cooperative operations can, therefore, be viewed as a public development good (Torgerson, Reynolds, & Gray, 1998).

Cooperatives, by their nature, seek to increase individual and collective wealth because they belong to their members. In addition, cooperatives are institutions whose activities are based on the idea of financial intermediation among the members to fulfil a variety of needs: some members requiring savings services, others, credit[9]. The cooperative is a movement of economic war against poverty, a struggle for economic support and solidarity and one of the most important tools used for poverty reduction (Atmiş et al, 2009).

According to Zeuli (2002), cooperatives have the potential to foster economic growth at the community and regional level, building on the spirit of cooperation that is already prevalent in rural areas. The potential for locally owned cooperatives to play a more central and direct role in rural economic development thus increases.

According to Allahdadi & Aref (2011, p.472), "the existence of cooperatives has had a generally positive impact on rural development, defined in terms of availability and access to amenities that improve the basic conditions of life for the rural people. These include employment creation,

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[9] www.microcreditsummit.org/papers *15/08/2011*

development of rural markets, enhancement of rural incomes, and the improvement of access to social services."

Ghosh & Maharjan (2001) studied the impact of dairy cooperatives on rural income in Bangladesh and assert that dairy cooperative members have higher levels of income than non-member households and their incomes are also much higher than the national average. In addition, members of dairy cooperatives were consuming more food stuffs than non-members.

Likewise, Simkhada (2004) assessed the impact of four SACCOs in Nepal's hill districts, using a sample of members and non-members, at community, household, individual and enterprise levels. According to the study, cooperatives use compulsory savings to develop prudence among members and to enhance the members' capacity to save and repay their debt on time. The researcher concluded that SACCOSs are financially sustainable and are in a position to provide a range of innovative micro finance services, meeting the needs of people living in the hills.

Onchangwa & Memba (2012) studied the effect of SACCOs on members' investment culture in Kenya by using 8 registered SACCOs in the Gucha district. The result of the study showed that SACCOs improved the investment culture of their members. However, this study didn't compare members of SACCOs with non-members nor did it control for the influence of other socioeconomic variables. According to Chambo (2009), there is a close correlation between food security in Tanzania, Kenya and Uganda and their long history and large size of cooperative organisations. The results of Adekunle & Henson (2007) study in Osun state Nigeria indicated that members of Cooperative Thrift and Credit Societies in the study area were better entrepreneurs than non-members.

Adebayo et al (2010) examined the contribution of cooperatives towards rural development and poverty reduction. The study reported that members established cooperatives to save which helped them to obtain loans. Members borrow money from cooperatives for various activities; 46% for construction of houses, 31% for children's education and the rest, 23%, for different family use. In addition, 70% of the respondents showed improvements in income after joining a cooperative, while 30% of the respondents said that their income remained the same.

Awoyinka (2009) found that the factors that influence food security status of households in Oyo state Nigeria are age, years of formal education, membership of cooperative societies and

participation in PIC (Presidential Initiative on Cassava). According to Mavimbela et al (2010) savings and credit cooperatives in Swaziland made a positive contribution towards crop production which encouraged farmers to join.

Enete (2004) studied the level of government intervention and the benefit of cooperatives in reducing poverty in Enugu State of Nigeria. The researcher used a qualitative questionnaire and some non-structured interviews with key informants. The findings revealed that most members' government institution activities as supportive, like member education, facilitate in obtaining loans from other agencies, subsides. Yet, some others believe the intervention of the government institutions acts as a burden on cooperative development. The study also acknowledged the impact of cooperatives on the employment market was positive and improving. The main limitation of the study was that it was not statistically tested and didn't compare cooperative members with non-member.

Adedayo and Yusuf (2004) looked at the contribution of cooperatives to alleviating poverty in rural settlements in Kwara State Nigeria. They found that cooperative membership reduces poverty and enhances members' needs satisfaction through asset acquisition, expanding farmland, investment and children's education. The drawbacks of the study were that it didn't compare members with non-members of the cooperative and there were no controlling mechanisms for other factors that may affect poverty and other outcome variables.

Abebaw and Haile (2012) researched the impact of cooperatives on agricultural technology adoption in Ethiopia using Average impact of Treatment on the Treated (ATT). The result confirmed that cooperative membership had a statistically significant and positive impact on fertilizer adoption among its members. They reported that cooperative improves the mean fertilizer adoption rate of members by about 9–10%. The study tried to control other variables that may affect fertilizer adoption. Yet, they didn't use qualitative data that can enrich the study and their focus was on the adoption of technology.

Bernard et al (2008) found that on average, small holders in Ethiopia who are cooperative members receive between 7.2% and 8.9% in higher prices for their cereal products than their non-member counterparts. The income of an 88-respondent sample comprising members from

three east African countries increased by 186 per cent as compared to pre-cooperative membership income (Majurin, 2012). However, the sample size is very small.

Lemma (2007) studied the cooperative movement in Ethiopia using qualitative data. She found that cooperatives are major supporters of self employment in the urban and rural areas which helps the income of the members to increase. Furthermore, he reported that members care about the well-being and economic problems of one another and also provide opportunities for casual labourers to be gainfully employed in order to reduce poverty. The study didn't compare members of cooperatives with non-members and there was no statistical test to justify the result of the study.

Sebhatu's (2012) confirms that there is a significant difference in the amount of expenditure of member households for the purchase of food, health and household equipment in the Tigray region of Ethiopia within a year after affiliation to a RUSACCO as compared to before affiliation. The member respondents said that even though their income improved, they did not want to express it in terms of frequency of eating. Rather, they focused on improving the quality of food consumed and clothes purchased. Sebhatu tried to identify the importance of other factors which influence the income of members after joining a RUSACCO. The study revealed that education, savings, numbers of loan availed, and years of membership in the RUSACCO were found statistically significant. However, this study didn't make clear whether it controlled other factors that affect member's income (such as, the size of land, family size, educational level, participation in other income generation, etc).

From the above reviewed works, one can conclude that, in most areas of the world, cooperatives bring benefits to their members. The research results found different outcome variables (for instance; physical asset, consumption, income, entrepreneurship etc). Most research work either focused on qualitative matters or quantitative ones. This means they lack either statistical testing or provide a qualitative insight only. In the majority of quantitative studies, the impact of other socio-economic and demographic variables that can affect the outcome variables are not controlled. Impact studies are by no means straightforward, and a host of other factors that affect food security/ poverty have to be carefully controlled. There has been limited study especially on the impact of RUSACCOs' on member households' food security.

2.6 Summary and Conclusion

This chapter has examined the concept of cooperatives and participation. A cooperative is a type of business organisation. Savings and credit cooperatives are a unique type in that they provide financial services for their member at reasonable interest rates. They have two main objectives to promote savings and to provide credit at a reasonable cost from the pool of member savings. However, their ultimate objective is to improve members' well-being through employment generation and improving the wealth of members.

A cooperative is a vital component in the rural economy in developing countries, where the majority of the population live below the absolute level of poverty. Cooperatives help the marginalised parts of society by bringing together co-operators with a view to enhancing their individual capacities. Various socioeconomic and demographic factors influence membership in rural cooperatives. Participation of members in cooperative business organisations may be in economic activities or cooperative administration. Members should actively participate in both economic activities and cooperative administration. Similarly, members' participation in cooperatives may be influenced by various socioeconomic and demographic factors.

The evidence on the impact of cooperatives in member households' food security and general household welfare is mixed. Majority of the research works carried out in different countries confirms that cooperatives help members to improve their livelihood in general and food security in particular. However, in some areas, they may not attain their intended goals for various reasons. Nonetheless, the research work on RUSACCOs has been inconclusive to date due to various reasons. For instance, the results of different studies showed that research work partly depends on the type of cooperative and partly on the research area context, and of course methodological difficulties in estimating the impact of cooperatives with reasonable probability of error. The research work in this area has been very limited. The majority of the research work lacks conceptual framework and most of the research may not be either statistically tested and/or may lack qualitative insight.

CHAPTER THREE

FOOD SECURITY AND MICRO FINANCE

3.1 Introduction

To study the impact of certain interventions on food security one should know what food security means and how it is measured. Food security is defined in different ways by many international organisations and scholars. However the most widely accepted definition is the one forwarded by the World Food Summit in 1996: "Food security, at the individual, household, national, regional and global levels is achieved when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

In poor, developing countries, financial resources are the main binding factor for achieving development goals. According to Fletschner & Kenney (2011), access to finance will enhance the economy and enable food security. However, due to heavy transaction costs requirements, it is very hard to cover a highly dispersed rural population through commercial banks. Therefore, many countries have designed different strategies to solve the financial service problems of their poor and marginal population. The main arrangement towards this effort is the provision of microfinance services through deposit taking Microfinance Institutions (MFIs) often based on the group lending approach, and membership based micro financial cooperatives and mutual assistance associations. Rural saving and credit cooperatives provide the rural poor with a micro saving and credit service.

Most research reveals the positive impact of microfinance institutions on poor households' food security and overall well-being. On the other hand, a small number of studies show the minimal role of micro finance institutions' in reducing poverty among the rural poor and even demonstrate a negative impact in some instances on poor households. Therefore, reviewing the concepts of microfinance, the relationship between microfinance and food security, and the impacts of microfinance on poor household well-being are very important in this research.

This chapter reviews some definitions of food security and indicators of food security, the concept of microfinance, the relationship between food security and microfinance, the

microfinance industry in Ethiopia and finally Ethiopian government polices related with household food security.

3.2 Concepts and Definitions of Food Security

There is much literature on the concepts and definitions of food security. It is defined in different ways by international organisations and researchers. According to Hoddinott (2001), there are close to 200 definitions and indicators of food security.

For instance, according to the World Food Conference of 1974, food security was defined as:

> *"Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices"* (Clay, 2002, p.2)**.**

However, it was soon realized by researchers in this area that this definition gave a very limited view of the food security problem because a large proportion of the population could be living in hunger even if the country had sufficient food in the aggregate during normal times. It is also a paradox that global food security exists alongside individual food insecurity. It has been widely accepted that the world produces enough food to feed everyone. However, many countries in the globe, regions within countries, districts within regions, villages within districts up to individuals within households are unable to meet their food needs (Seid, 2007). This implies that adequacy at the national level does not necessarily ensure adequacy at the household level. Thus, food security definitions broaden from emphasizing the supply side through to the individual and household level (demand side) for improved access to food in the 1980s (Thomas, 2006).

In 1983, the FAO expanded its concept of food security to include securing access by vulnerable people to available supplies of food, implying that attention should be balanced between the demand and supply side of the food security equation:

> "ensuring that all people at all times have both physical and economic access to the basic food that they need" (FAO, 1983, p.1).

However, in the 1990s, improved access was redefined by taking into account livelihood and subjective considerations. It emphasizes a broader framework of individual behaviour in the face of uncertainty, irreversibility, and binding constraints on choice (Maxwell, 1996).

The most widely used definition of food security is the one forwarded by the World Food Summit in 1996 as shown in Seid's (2007, p.24) study of food security:

"food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

The food security concept addresses people's risks of not having access to needed food. These risks can arise from income or food production, for instance. Even in a "normal" situation, with no crises such as sudden price changes, these risks typically are higher the closer a household is to inadequate dietary intake. Thus, at household level, food security is the ability of the household to secure enough food to ensure adequate dietary intake for all of its members (Von Braun, 1995).

According to Chung (1997, p.5), there are two temporal dimensions of household food insecurity. These are chronic and acute food insecurity. In theory, they can be distinguished, but in reality they are closely related. Chronic food security is characterized by a persistent inadequate diet over the long terms, whereas, acute food insecurity in contrast, is a temporary decline in a household's access to needed food.

According to Braun et al (1992, p.10), food security and the nutritional well-being that arises from food consumed by households are determined by a minimum of five interrelated factors:

"1. Availability of food through market and other channels, which is a function of factors. Such as; smooth market operations, functioning infrastructure and free flow of information.

2. Ability of households to acquire whatever food the market and other sources have to offer, which is a function of household income levels and flows and the resource base for subsistence farming;

3. Desire to buy specific food available in the market or to grow them for home consumption, which is related to food habits, intra household income control, and nutritional knowledge;

4. Mode of food preparation and distribution among household members, which are influenced by income control, time constraints, and nutritional knowledge;

5. *Health status of individuals, which is governed by such factors as the nutritional status of the individual, nutritional knowledge, health and sanitary conditions at the household and community levels, and caretaking."*

In addition, in order to improve household food security, it is imperative to identify the specific risks so that effective and efficient risk reducing actions can be developed. Risk is the likelihood of losses resulting from events such as changes in market prices.

Von Braun et al (1992, p.17) highlights, the following as some of the sources of risk of food insecurity

"1. Crop production risks (pests, drought, and others): Smallholders with little income diversification and limited access to improved technology such as improved seeds, fertilizer, irrigation, pest control landless farm labourers

2. *Agricultural trade risk (disruption of exports or imports): Smallholders who are highly specialized in an export crop, small scale pastoralists, poor household that are highly dependent on imported food, urban poor*

3. *Food price risks (large, sudden price rises): Poor, net food purchasing households*

4. *Employment risks: Wage earning households and informal sector employees (that is, in peri-urban areas and, when there is a sudden crop production failure, in rural areas)*

5. *Health risks (infectious diseases, for example, resulting in labour productivity decline): Entire communities, but especially households that cannot afford preventive or curative care and vulnerable members of these households*

6. *Political or policy failure risks: Households in war zones and areas of civil unrest, households in low potential areas that are not connected to growth centers via infrastructure*

7. *Demographic risks (individual risks affecting large groups): Women, especially when they have no access to education, female headed households, and children at a weaning age, the aged."*

Food security is still the major concern for Ethiopians. According to humanitarian requirements document, around 3.76 million people in Ethiopia required relief food assistance between August and December 2012. Household food security in Ethiopia is largely determined by factors like rainfall patterns, land degradation, limited alternative livelihood opportunities, climate change and low levels of rural investment (MoFED, 2006).

3.3 Food Security Indicators

Food security indicators are summary measures of one or more of the dimensions of food security used to demonstrate change or the result of a program or certain interventions for a target population. These indicators are needed to measure improvement in the food security status of the participant households as a result of intervention. Some of the most commonly used types of indicators in the assessment of food security conditions include those related to: income, total expenditure, food production, food expenditure, share of expenditure on food, caloric consumption and nutritional status (Riely et al, 1999).

Migotto et al (2006, pp.2-3) has identified five types of food insecurity measures.

"The first one is undernourishment. To measure undernourishment, the per capita dietary food energy supply, which is derived from the aggregate food supply data, is estimated. This method is useful for comparisons of energy deficiencies across countries and over time.

The second group of indicators is food intake, which measures the amount of food actually consumed at the individual or household level. It is obtained directly by measuring actual food intake through different techniques, including dietary histories. However, this method is costly than the standard household survey and require a level of human and financial resources not available in most developing countries. Instead, food consumption is usually measured indirectly through household surveys.

A third approach to the assessment of dietary deficiencies is to measure food utilization through nutritional status. Anthropometric attainment, however, is a non-specific indicator, because it is the result of food intake and other factors such as sanitation, health and child care practices.

The fourth group of indicators revolves around the concept of vulnerability. It is an inherently dynamic concept which communicates ex-ante vulnerability and ex-post outcomes. It is difficult to measure because it is an expression of future state of the world.

Finally, the last approach is access to food and can be proxied by wealth status, measured by income, total consumption, or expenditures. Access to food indicators has served as the main food security indicators in many countries."

However, it was understood that no single indicator can capture all aspects of food insecurity. The indicators selected to measure the impact of food security interventions will vary depending on the conceptual framework. More recent research uses income and consumption as dependent variables for the measurement of a microcredit programs' impact (Li & Eli, 2010; Tenaw & Islam, 2009). According to MoFED (2006, p.18), "in less-developing countries like Ethiopia, consumption rather than income is viewed as the preferred food security indicator because consumption better captures the long-run welfare level than current income. Income is only one element that allows consumption. Therefore, consumption may better reflect households' ability to meet basic needs than income." According to the same report, consumption reflects the ability of households to access credit and saving at times when their income is very low. According to MoFED (2006, p.19), "in most developing countries, the income report of households is likely to be understated compared to consumption expenditure report. Income is so erratic and seasonal that it may be very difficult for respondents to recall." An additional measure that can complement consumption is household food expenditure, since food expenditure would be strongly associated with food hardships (Gundersen & Ribar, 2005).

3.4 Micro Finance Institutions and Food Security

According to Hammill et al (2008, p.114), microfinance is defined as;

> *"The delivery of small loan, savings, insurance and other financial services to the poor so that they can generate income opportunities, build assets base, stabilize consumption and protect themselves against risk."*

Similarly Asian Development Bank (ADB) (2000, p.2) defined it as follows:

> *"Microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers and insurance products to the poor and low-*

income households, for their microenterprises and small businesses, to enable them to raise their income levels and improve their living standards."

Microfinance involves small-scale transactions in credit and savings designed to meet the needs of small- scale and medium-scale producers and businesses. Microfinance programs also empower the poor by providing skill based and consciousness raising training to augment productivity and organisational support (Khandker, 2005).

According to Bogale & Shimelis (2009), the determinants for achieving food security are access to credit, infrastructure, and access to land ownership. Financial services assist households in maintaining food security and smoothing consumption, thereby enhancing the productivity of labour, which is the most important production factor of the poor (Zeller, 2006). There is a strong demand for small scale commercial financial services for both credit and savings among the economically active poor of the developing world. These services, together with other financial services, help poor people to increase productivity, improve household and enterprise management, enlarge and diversify their micro business, smooth income flows and consumption costs, and increase their incomes (Robinson, 2001).

Bateman (2011) has indicated that microfinance as a development policy has had mixed results worldwide and variable level of impact among different countries. This was attributed to variations in roles and impacts of rural credit services resulting from differences in the socio-cultural, agro-ecological, natural resource endowment, geographical location etc of a given region or country and among different groups of a community (male, female, rich, poor etc).

According to UNDP (2008), MFIs can help people become more economically strong. In turn, this has a multiplier effect on the standard of living of the poor, enhancing household food security, health, shelter, and sanitation and education services. It can also help the people to prevent and extricate from debt and often liberate poor households from moneylenders with outrageous interest rates (Daley, 2003).

Meanwhile, microfinance is expected to be one of the most important tools to fight poverty in rural areas of less developing countries where credit markets tend to be less developed due to information asymmetries and the lack of enforcement (Hoff & Stiglitz, 1990; Armendáriz & Morduch, 2005). According to Ahlin & Jiang (2008), micro-credit has been called one of the

most significant innovations in development policy of the past twenty five years. It aims to extend small amounts of capital to poor borrowers throughout the world, typically to facilitate income generating self-employment activities. Lack of access to and inadequate provision of financial services are the main reasons for the expansion of the microfinance sector, especially in less developed countries. According to Arun et al (2009), this arrangement helps to mitigate against the problem of financial exclusion among the poor and is seen as an alternative solution for the failures in agricultural lending and rural credit assistance practices marred by substantial subsidies, higher transaction costs, urban biased credit allocation, corrupt practices, high default rates and skewed incentives.

Thus, much of the research shows that if the rural poor have access to microfinance, their livelihoods improve. According to Herman et al (2006) when financial barriers are broken down, low-income households do purchase locally grown fruits and vegetables. In Andhra Pradesh, 76.8% of micro finance clients have experienced a reduction in poverty (Todd 2001 cited in (Goldberg, 2005)). However, clients' intended use of loans is important in determining poverty reduction outcomes (Imai et al, 2010).

Research work done by Remenyi & Quinones (2000) on the Asia and Pacific region revealed that household incomes of families with access to credit is significantly higher than for comparable households without access to credit. The same study revealed in Bangladesh a 29.3% annual average income rise for microfinance clients compared with 22% of non-clients. In Indonesia, a 12.9% annual average rise in income from borrowers was observed while only a 3% rise was reported for non-borrowers.

Similar types of study done in Lima, Peru show 28% of microfinance clients live below the poverty line compared to 41% of non-clients. The average income is over 50% higher (Cohen & Dunn, 1999). According to Khandker (2001) in Bangladesh the incidence of poverty in microfinance participant households compared with non-participant households is lower in 1998/1999 than in 1991/1992. Similarly, (Enisan & Oluwafemi, 2011) indicate that microfinance loans in Ondo state, Nigeria provide opportunities to expand users' businesses and have a significant positive effect on beneficiaries' welfare.

However, some of the recent findings revealed that microfinance has also negative impact on the livelihood of its users. For instance, a study in the Philippines shows that the impact of microfinance institutions on lower income households is negative and this may be due to the problem that clients are concentrated among the poorer households and the average size of loans may be smaller for poorer households (WB , 2007). Kondo et al (2009) and Odell (2010) found that this impact is regressive-that it is negative or insignificant for poorer households and becomes only positive and increasing for richer households. Similarly, Frank (2010) purports that in Tanzania reveals that, for some households, microfinance loan repayments are only possible under very difficult financial circumstances. They also reported little profit from the income generating activities as a result of high interest rates, short repayment periods and other setbacks at the operational level.

Stewart et al (2012) explained the reason as to why microfinance increases poverty is because of loans at high interest rates which need to be repaid quickly, borrowers do not necessarily invest their loans, the investment may not guarantee profit due to economic environment, lack of entrepreneurship etc. Based on Rooyen et al (2012) systematic review of the impact of microfinance in Sub-Saharan Africa, they recommend that policy makers ensure greater requirements for thorough evaluation of pilot programmes before scale up to larger populations to minimise the risks of doing harm.

3.5 Microfinance Institutions and Development in Ethiopia

Microfinance institutions (MFIs) in sub-Saharan Africa include a broad range of diverse and geographically dispersed institutions that offer financial services to low-income clients. These are rural banks, non-bank financial institutions, non-governmental organisations (NGOs) savings and postal financial institutions, cooperatives, and an increasing number of commercial banks (Lafourcade et al, 2006).

Microfinance institutions in Ethiopia were started in 1994/1995 with clearly a defined mission of rural poverty reduction. Particularly the Licensing and Supervision of Microfinance Institution Proclamation of the government in 1996 motivated the spread of Microfinance Institutions (MFIs) in both rural and urban areas as it authorized them among other things.

According to Tamene (2012, p.17), this microfinance institution proclamation, "allowed formal microfinance institutions to legally accept deposits from the general public that can help to diversify sources of funds, to draw and accept drafts, and to manage funds for the micro financing business."

In Ethiopia, the microfinance industry is in its infant stage. Mobilized client savings based on data from 2006 by MFIs in Ethiopia had reached 3.6% of gross national savings (Kereta, 2007). According to Yirsaw (2008), the outreach of Ethiopian microfinance institutions was increased by nearly 300% from 2001 to 2005. This is an indication that the Ethiopian microfinance sector is one of the fastest growing microfinance industries in the world today.

While significant growth has been realised over the past ten years, the rural financial markets of Ethiopia are still under developed. The rural areas are affected by inadequate access to financial services which is one of the major bottlenecks impeding economic growth and household incomes where there is still a huge demand-supply gap. Moreover, according to Kinde (2012) the micro finance institutions in Ethiopia highly depend on external donor contributions. This could have an adverse effect on the sustainability of the sector.

According to IFAD (2011), MFIs and RUSACCOs are the only formal and semi formal financial institutions respectively, providing financial services to poor rural households, with increasing access for women. Currently, in Ethiopia, only about 15% of rural households have access to credit and savings services, whereas the micro-insurance market is not developed (ibid).

Although access to financial services alone is not a cure for rural poverty reduction, there is growing evidence that access to financial services is one of the critical tools in poverty reduction. Many scholars have studied the impact of microfinance institutions in different parts of Ethiopia. For instance, according to Berhane & Gardebroek (2012) the impact of microfinance on rural households in Ethiopia using propensity score matching indicated that early microfinance participants benefited from higher average annual consumption over time, compared to late participants.

Similarly, Meehan's (2001) case study of DECSI[10] revealed that overall credit provision had a significant impact on increasing agricultural production by supporting poor people to build-up productive assets, particularly animal draught power. Moreover, the amount of land farmed by clients increased because they were able to retrieve land previously rented out and farm it themselves, and were able to get more land by renting. Moreover, according to the same report, due to the expansion of the microfinance institutions, clients trading activities improved. Female clients, in particular, are able to take on trading activities which had previously been inaccessible to them due to lack of capital. Such improvement in income due to improvement in financial service (such as, credit) had played a positive role in improving household food supply, and in improving educational provision for children and clothing and other basic necessities. However, such positive outcomes reported in this study were dependent on continued access to credit on regular basis (Amha, 2008). The provision of financial services to the poor by DECSI has a significant role to play in providing household food security and alleviating poverty. However, Meehan argued that this role for microfinance institutions must be seen in the context of development of the overall economy, in which the policy environment and priorities, infrastructural development, government and private sectors' investment, all play their part (Amha, 2008).

A study in Western Ethiopia by Gebru & Paul (2011) revealed that the mean monthly food expenditure of the respondents before microfinance use was 370.59 Birr. In comparison, their mean monthly food expenditure after microfinance use was 515.51 Birr.

Dercon & Krishnan's (1996) study in rural Ethiopia and Tanzania indicated that financial services provides opportunities to increase income and assets, which eventually contribute to the decline of poverty in the country. In addition, Tsegaye & Bediye (2002) indicated that women micro-enterprise operators that used microfinance services were socially empowered because they felt much greater self-esteem and satisfaction due to the fact that they can run their own income generating microenterprises for the welfare of their families.

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[10] Dedebit Credit and Savings Institution SC (DECSI) is a microfinance institution operating in the Tigray Region, in northern Ethiopia. It is regarded as one of the four largest MFIs in Africa.

Admassie et al's (2005) study of the Ethiopian rural finance sector revealed that about 85% of the respondents increased their income from non-farm activities while about 35% experienced remarkable increases in their income. About 50% of the respondents reported that they had bought live animals over the last season. Some 30% indicated that they cultivated additional subsistence crops during the year. Around 20% of respondents indicated that they had bought inputs (like, fertilizer) in greater quantity and purchased farm equipment and machinery. About 25% had planted cash crops. Moreover, more than 80% believe that compulsory savings are important to repay loans, and are useful for future consumption, capital accumulation and asset building.

Access to financial services presents choices for the poor, enables them to engage in improved livelihoods, and allows them smooth their consumption without falling into a debt trap. Moreover, access to financial services is important in tapping and unleashing the productive potential of poor households (including women) and this contribution can promote inclusive growth with equity (IFAD, 2011).

Gobezie's (2001) study revealed that ACSI's (Amhara Credit and Saving Institution) financial service helps its clients to increase their income and improves food security. The clients reported that they were better-off after obtaining the financial services that ACSI provided. He concluded that, in the study area, access to finance in the rural areas has improved access to education and health services. According to the same study, about 50% of clients of ACSI are women. However, only 38% of women clients reported that they manage their enterprises themselves. Around 55% of female respondents revealed that they manage the enterprises jointly with their husbands. The rest 7% reported that their husbands run the activities of their enterprises.

However, some studies revealed that the impacts of a small number of microfinance institutions on clients' livelihood were minimal. For example, Doocy et al (2005) concluded that participation in the WISDOM [11] microfinance institution did not result in increased household

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[11]   Wisdom   MFI   is   one   of   the   microfinance   institutions   operating   in   Ethiopia. http://www.mixmarket.org/mfi/wisdom#ixzz2Yj0iKvd6 15/11/2011

wealth. Similarly, Desai et al (2011) in rural western Ethiopia revealed that there was little significant impact of microfinance institutions on household economy, although, some clients benefited from livestock ownership and sales. Tarozzi et al (2013) study on the impact of micro credit program in rural Ethiopia also indicated that despite a substantial increases in the number of borrowers in the study areas, they did not bring significant changes in their clients in a number of socio economic outcomes (such as; income from farming, animal husbandry, non-farm self-employment). According to Siyoum et al (2012) study in Ethiopia, microcredit only helps user poor households for short term consumption smoothening rather than achieving long-term livelihood improvement.

From this literature, one can conclude that the microfinance institutions impact on clients' livelihood in most parts of the world is positive, while in some areas their impact was insignificant and even negative. Different researchers used different outcome variables in different contexts. This means that research work in this area has not been exhaustive and/or the impact is seen to vary due to country and financial institution context. Moreover, most of the research in this area is descriptive, with few statistical tests.

3.6. Agriculture and Food Security Policy

3.6.1 Agricultural Development Led Industrialization

After the fall of the Derg regime in 1991, Ethiopia has been following a long-term strategy of Agricultural-Development-Led Industrialization (ADLI) adopted in the mid-1990s. It emphasises sustainable agricultural development, achievement of food security and the improvement of living standards in rural areas. It is obvious that, for a country where the majority of the population resides in rural areas (85%) and makes a living from agriculture, poverty reduction requires agricultural growth. ADLI emphasizes the significance of the agricultural sector for the overall economic development of Ethiopia.

ADLI has united various components of the economy that can support agricultural growth, including the available human power, finance, technology, rural infrastructure, internal and external markets and the private sector.

Table 3.1: The targets of ADLI on various components of the economy

No	Component	Target
1	Improvements in food security.	The medium- to long-term target is to reduce the absolute size of the food insecure rural population substantially, to exit from food aid, and to rely on fiscal transfers to support a residual number of food-deficit households. Food insecurity is seen as a result of extremely small size of landholdings and drought sensitivity of traditional dry-land agriculture. Measures for achieving food security include dissemination of information on available technology and voluntary resettlement from the highland to lowlands under irrigation schemes.
2	Commercialisation of agriculture	As agriculture is seen as an engine of growth, the need for commercialisation of agriculture arises. This requires more intensive farming, increasing the proportion of marketable output. It is intended to enhance research and extension, intensify and diversify the application of inputs, introduce new products, expand irrigation, encourage service providers, foster contractual production cum trading between farmers and traders and construct rural roads. Leasing of land held by the government will be encouraged by specifying the conditions of lease to facilitate the collateralisation of land.
3	Extension of credit and deposit mobilization	Providing loans to small farmers is seen as an appropriate mean to both combat poverty and commercialise agriculture. The government has recognized that microfinance is the suitable tool to achieve this. Hence, in the medium-term future, it is expected that MFIs will be the dominant source of credit supply to smallholder farmers. The existing loans underwritten by the regional governments will be substantially phased out from MFIs. Deposit mobilization by MFIs is seen as a second crucial point for the development of agriculture.

Source: (MoFED, 2002)

3.6.2 Ethiopian Food Security Strategy

Food security interventions were primarily concerned with providing effective shock absorber mechanisms against food access fluctuations (Valdes 1981; Barrett 2002). The Ethiopian food security strategy aims at improving the food security of a large segment of the vulnerable population. It highlights the government's plans to address the causes and effects of food insecurity in Ethiopia. According to MoH (2011, p.106), there are two major approaches towards achieving food security in the country:

1. Promoting agricultural productivity
2. Building resources (productive safety net programs (PSNP)).

Enhancing agricultural productivity helps to increase the supply of food from domestic production. The main objective of the productive safety net program is to build the assets of the highly vulnerable parts to enable livelihood development.

The food security strategy is a multi-sector strategy, which will touch on many different policy areas including that of land tenure and land use, rural credit and marketing systems.[12] Hence, the food security strategy of Ethiopia focuses on the following seven areas:

"*1. Environmental rehabilitation: Measures to reverse the level of land degradation and create a source of income generation for food-insecure households through a focus on biological measures, such as re-forestation and land preservation.*

2. Water projects: Water harvesting and the introduction of high-value crops, livestock and agro-forestry development.

3. Enhancing agricultural productivity: Agriculture is considered to be the starting point for initiating the structural transformation of the economy. Therefore, in Ethiopia agricultural development-led industrialization (ADLI) has been pursued as a major policy framework since 1991. ADLI focuses on the development of agriculture and helps expand markets for domestic production leading to increased incomes for small holders.

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[12] http://www.preservearticles.com/2011112117669/12/05/2011

4. *Controlling population growth: High population growth rates continue to undermine Ethiopia's ability to be food secure and provide effective education, health and other essential social and economic services. The central elements of the policy focus on a multi-sector approach, improving family planning services and expanding education.*

5. *Prevention and control of HIV/AIDS: HIV/AIDS is a formidable challenge to the pursuit of food security in Ethiopia as it reduces and debilitates the productive population and society as a whole. The government has put in place a national policy and countrywide program for the whole population to control and reduce the spread of the disease.*

6. *Gender: Women have a substantive productive role in the rural sector, including participation in livestock maintenance and management, crop production, and the marketing of rural produce. Integration of gender perspectives in the design and implementation of economic and social policies, programs and projects is considered central to the national food security strategy.*

7. *Environmental sustainability: This is critical to the pursuit of food security and economic development generally. Development depends on the appropriate and sustainable use of the environment and the management of natural resources. Given the high environmental degradation in drought-prone and pastoral areas, environmental rehabilitation (soil and water conservation) is an essential element."* (MoH, 2011, p.106).

3.6.3 Growth and Transformation Plan

The current five-year Growth and Transformation Plan (GTP) for 2010/11-2014/15 carries forward the successful strategies of the previous Plan for Accelerated and Sustained Development to End Poverty (PASDEP).

"The GTP emphasizes the importance of promoting rapid and broad-based economic growth through seven strategic objectives:

1. *Sustaining equitable economic growth;*
2. *Maintaining growth focused on agriculture and rural areas;*
3. *Developing industry;*
4. *Expanding infrastructure;*

5. *Enhancing the expansion and quality of social development;*

6. *Building capacity and promoting good governance;*

7. *Promoting empowerment of women and young people."* (MOFED, 2010, p.22).

To achieve this far reaching goal, finance is considered as a key input. The Financial Sector Strategy of 1998 is also consistent with the goals of accelerated economic growth. This particular strategy aims at improving access to finance, in the country as a whole and in rural areas in particular, by creating conducive environment for and operation expansion of financial institutions and markets. It extensively outlines policy measures to be taken by the government to build and preserve a stable, efficient and inclusive financial system. Rural saving and credit cooperatives are vital institutions for addressing such a problem.

In line with this strategy, the Rural Financial Intermediation Programme (RUFIP) in Ethiopia has planned delivery of financial services to reach almost 7 million rural households by 2019. Its primary goals according to IFAD (2012, p.4) are,

"1. *Institutional support to microfinance institutions (MFIs) and cooperatives;*

1. *investments to improve regulation and supervision of MFIs and rural savings and credit cooperatives (RUSACCOs);*

2. *a line of credit to bridge liquidity gaps for MFIs and RUSACCOs."*

3.7. Summary and Conclusion

This chapter reviewed some concepts of food security, microfinance institutions and the relation between microfinance and household food security. Moreover, it discussed some issues related to food security in Ethiopia. Food security can be seen from different perspectives. At household level, a food secured household is the one which has enough food available to ensure a minimum necessary intake by all household members. Household food security entails both the availability of food and the ability of all members of society to have access to adequate amounts of food.

Microfinance institutions are designed to provide the marginalised parts of society with micro credit and saving services. They can be owned by users (like financial cooperatives) or owned by others. According to different research from across the world, the majority of microfinance institutions have played an important role in improving the livelihoods of their clients. However, in some areas, they have played a minimal role and even had a negative impact on their clients' well-being.

The Ethiopian government has tried to curb the food insecurity problem by designing different policy measures. One of the major components of these policy measures is the provision of financial services to the rural poor through formal and semiformal financial institutions. Among vital policy measures; ADLI, the Food Security Strategy and GTP are prominent.

Although many studies have been done on the impact of rural financial institutions (SACCO and other MFIs) on members'/ clients' livelihood across the world, these studies didn't explicitly point out the determinants of rural households' membership and members' level of participation in different activities of RUSACCO, and also the impact of RUSACCO on member households' food security. Furthermore, there has been no study on the impact of RUSACCOs on member households' food security, especially in the Amhara National Regional State of Ethiopia. However, research work in this area is vital, from both a development research perspective and for policy making. Therefore, it is precisely this gap in the literature that this research seeks to fill.

CHAPTER FOUR

COOPERATIVES IN ETHIOPIA

4.1 Introduction

In chapter two was concentrated on the history of and participation in cooperatives throughout the world. The focus of this chapter is on the history and status of cooperatives in Ethiopia in general and the cooperative movement in Amhara National Regional State (ANRS) in particular.

Cooperatives are a way of life for Ethiopian rural people; however, the history of modern cooperatives started in the mid 20th century during the Emperor Haile Selassie I era (1932-1974). The main motive was to solve unemployment problems. During the Derg era (1974-1991), there were tremendous efforts to promote rural cooperatives with the objective of achieving the socialistic goal of government.

The existing EPRDF government has also acknowledged the vital role of cooperatives for improving food security for the rural poor and for general economic development. In the ANRS, currently, there are around 17 types of cooperatives and saving and credit cooperatives, the second largest number of cooperatives next to farmers' multipurpose cooperatives. Rural saving and credit cooperatives are a very new type of cooperative in Ethiopia promoted with proclamation No. 147/1998 issued in 1998.

4.2 History of Cooperatives in Ethiopia

Cooperation in Ethiopia has a long history, particularly in the form of traditional collective organisations, such as rotating savings and credit associations (iqubs), work groups (jiges, wonfels, debos), and burial societies (idirs). These cultural cooperatives exist still now especially in rural Ethiopia.

Modern cooperatives in Ethiopia started in the 1960s. During this time, Ethiopia was under the ruling era of Emperor Haile Selassie I (1932-1974). The main reason for the initiation of the modern cooperative at this period was to solve unemployment problems, especially for retired workers (Bernard et al, 2010). During this time, the first cooperative legislation was declared and it is known by Decree number 44/1961. The main objective and purpose of this Decree was to

promote the economic interest of Ethiopia in general, and their members in particular, through effective and efficient cultivation and development of land.

Accordingly, the first cooperatives' proclamation known as proclamation number 241/1966 was put in place. The main reason for this proclamation was to provide a proper basis for the formation of cooperative societies to promote thrift, mutual help and self-help among persons sharing common needs and desires. According to Mahmud (2008, p.16), based on this proclamation, 158 cooperatives were established with 33, 400 members and 9.97 million Birr (around 0.04 million euro) total capital. But the attempt was not effective to solve the problem of poor farmers because the focus was only on potential areas for agricultural production in order to enhance the production of economically important crops/cash crops for export and, as a result, land ownership was a basic criterion for membership. The main objective was to maximise profit. During this period, in most parts of Ethiopia, few landlords owned the land. Rich commercial farmers were encouraged to become members of the cooperatives. Therefore, from the very beginning, it failed to meet the demands of poor farmers (Zerihun, 1998).

According to Zerihun (1998), the establishment of savings and credit co-operative societies in Ethiopia started in the mid-1960s. The first one was pioneered by the employees of Ethiopian Airlines in 1964. From 1964 -1973, there were 28 savings and credit cooperative societies and these societies formed their own national apex body known as Ethiopian Thrift and Co-operative Societies Ltd (ENTACCS). At that time, the apex had 28 SACCO societies with 6, 247 members and 1.57 million Birr ($ 0.76 million), 752 members' savings. The apex was a member of the African Confederation of Co-operative Savings and Credit Association (ACCOSCA).

In 1974, the Military junta (Derg) had overthrown the Emperor Haile Selassie I government. The Derg abolished all cooperatives except credit and saving cooperatives and established new cooperatives based on a socialist ideology. In 1978, the Military junta proclaimed the cooperative organisation proclamation number 138/1978. This proclamation envisaged collective ownership of production by way of mobilizing peasants. The main objectives of this proclamation were to develop self-reliance and to promote the interest of their members and to participate in the building up of the socialist economy.

During this era, cooperatives began to see change in fortunes as their roles in economic development were understood better. Though tremendous efforts were made to promote cooperative societies, members lacked tangible benefits and they had no role to play, hence the sense of ownership faded and the cooperatives started to disintegrate and suffered a loss of credibility. According to Mahmud (2008, p.16), during 1990 there were 10,524 different types of cooperatives with 4.53 million members and capital of Birr 465.47 million (€ 33.70 million) throughout the country. Of these cooperatives, 80% were rural cooperatives.

Though the military government issued a proclamation to promote and support cooperatives, its main target was to promote a socialist ideology throughout rural Ethiopia using cooperatives as a means of attaining its objectives. Moreover, membership was not on a voluntary basis, which contradicted the international cooperative principle.The government had control over cooperative management, governance, and finance and property administration. Therefore, almost all of the producers' cooperatives and many other types of cooperatives were abolished or highly weakened when the government issued a mixed economy policy which gave a chance for cooperative members to decide on their cooperatives. The producers' cooperatives were abolished within a very short time.

By the time the EPRDF overthrew the Military Derg and formed the government of Ethiopia, cooperative members had no trust in their cooperative and cooperative leaders. These leaders were seen as corrupt and who had misappropriated cooperative capital and property, initiating members to abolish their cooperatives and looting the property of the cooperatives. According to Rahmato (1994), Ethiopian MoA auditors investigated around 25% of cooperatives and found more than 24 million Birr ($11.59 million) misappropriated by the management committees and employees of MPCSs. The audit findings clearly showed the tip of the iceberg, given that audits were carried out on few numbers of cooperatives. In general terms, the members lacked tangible benefits and there was no role to play for members, hence the sense of ownership gradually declined.

The EPRDF led government has made efforts to promote a generation of cooperatives that are based on international cooperative principles. Among the efforts, legal reforms in 1998 and 2004 were introduced to reinforce these principles and strengthen membership incentives by improving members' rights in the areas of ownership, voting, share transfers, and risk

management (Rahmato, 2002). The new arrangement of cooperatives was to be based on free will to organise, free of government intervention in its internal affairs and able to fully participate in the free market (Proclamation 85/1994, published in FDRE [1994], p.1). Such reforms help to govern cooperatives in accordance with standard bylaws that provide for regular election of cooperative management committees and for voting based on one member, one vote principle of cooperatives. In other words, these reforms are designed to create a new generation of cooperatives in Ethiopia that are voluntary, accountable, and inclusive, in contrary to the cooperatives formed under Ethiopia's previous regime.

Moreover, various government poverty reduction and sustainable development documents gave due attention to the role of cooperatives: for instance, the Sustainable Development and Poverty Reduction Program (MoFED, 2002) and the Accelerated and Sustained Development to End Poverty (MoFED, 2006) were the main documents of the GoE in this regard.

Rural savings and credit cooperatives (RUSACCOs) became very important in savings mobilization and the provision of micro loans to members in rural areas of Ethiopia. According to some researchers, RUSACCOs are mostly preferred by rural households due to easy accessibility of the services (physical proximity), relatively low interest rates compared with other credit sources such as deposit taking MFs and informal financial institutions, customer care, minimum deposit requirement, ease of access for savings, and informal nature of transactions (Beverly& Sherraden, 1999; Onyenwaku & Ozoh, 1992). Since 2011, there are 5,296 RUSACCOs active in the country with the total membership of 443,123 (227,135 male and 215,988 female) (Tesfamariam, 2012).

4.3 Cooperatives in the Amhara National Regional State (ANRS)

4.3.1 Brief Overview

Like every part of Ethiopia, cooperation of the people to solve their common problems is traditional. Currently in the ANRS, there are around 17 types of cooperative. The responsible body for the promotion and supervision of cooperatives is the ANRS Cooperative Promotion Agency (CPA). The status of SACCOs in terms of number of members is second next to multipurpose cooperatives. Members of most of the SACCOs established in urban areas are salaried people while in rural areas they are formed by farmers and other rural residents.

In 2011, out of the total cooperatives, 24.35% were saving and credit cooperatives (see Figure 4.1). However, in terms of membership size, the SACCOs represent only 4.62% of all cooperative members. The proportion of women in SACCOs is higher than in most other forms of cooperative (see table 4.1).

Figure 4. 1. Distribution of different types of cooperatives in Amhara region in 2011
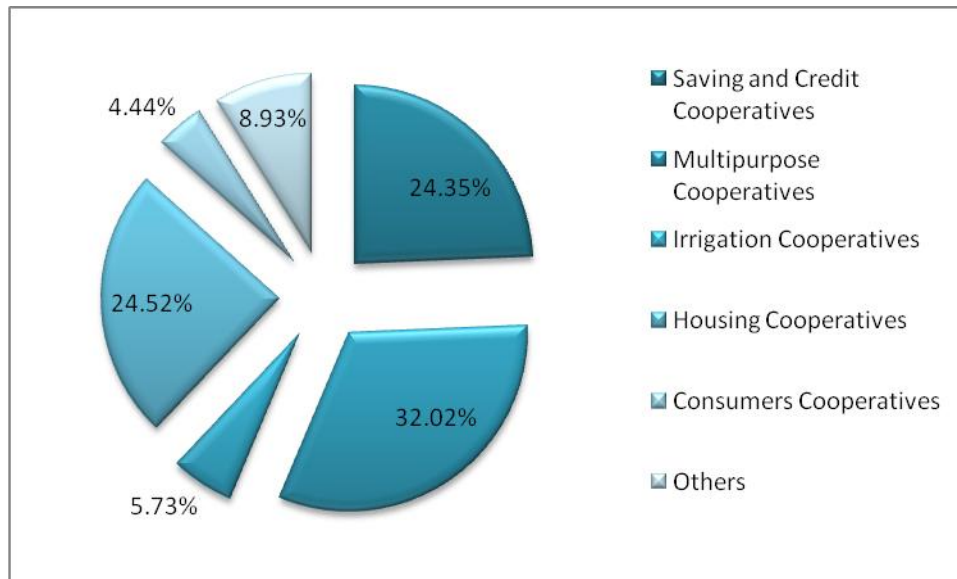
Source: Amhara National Regional State Cooperative promotion Agency Annual Report, 2011

Table 4. 1: Distribution of cooperatives in Amhara National Regional State

| No | Type of Cooperative | No of Coops | No of Members | | | Percentage of Women |
			Male	Female	Total	
1	Animal husbandry &Fattening	77	2817	960	3777	25.42
2	Api-culture	42	9304	931	10235	9.10
3	Artisan	119	2914	1559	4473	34.85
4	Consumers	263	45851	28600	74451	38.41
5	Crop & Forest	4	624	89	713	12.48
6	Dairy	112	5070	1004	6074	16.53
7	Fishery	12	1278	37	1315	2.81
8	Housing	1452	24077	12417	36494	34.02
9	Ince & Gum	16	2082	117	2199	5.32
10	Irrigation	339	31710	6097	37807	16.13
11	Mining	78	2676	404	3080	13.12
12	Multipurpose	1896	1670003	292283	1962286	14.90
13	Natural Resource	43	5441	1003	6444	15.56
14	Saving & Credit	1442	68386	35904	104290	34.43
15	Seed Producers	16	2018	764	2782	27.46
17	Vegetables& Fruits	10	438	22	460	4.78
	T0tal	5921	1874689	382191	2256880	16.93

Source: Amhara National Regional State Cooperative promotion Agency Annual Report, 2011.

4.3.2 RUSACCOs in the Amhara Region

RUSACCOs are rural member-owned organisations with governance and operating procedures defined by their by-laws. Currently there are 1,081 RUSACCOs operating in the region. These RUSACCOs have a membership size of 74,693 out of which 50,877 are male and 23,816 female.

The general assembly, the management and board of directors are in charge of day-to-day activities. Some RUSACCOs have employed staff and are managed by a management committee. Other committees are the control committee, loan, saving, education and dispute committees. Low skills and weak incentives for committee members limit sound management and growth.

These RUSACCOs have managed to mobilize savings amounting to Birr 27.1 million and with a total capital of Birr 15.58 million. The RUSACCOs disbursed total loans to their members amounting to Birr 48.23 million during year 2010/11. As regards RUSACCO Unions, 17 have been established having 642 member cooperatives. These Unions have mobilized BIRR 62.00 million savings from their members, share capital of Birr 12.75 million (€ 0.53 million), grant Birr 1.42 million (€ 0.06 million) and have reserves of Birr 8.8 million (€ 0.36 million) and total assets of Birr 127.55 million (€ 5.27 million). They have disbursed loans to their members amounting to Birr 40.90 million (€ 1.69 million) and borrowed Birr 42.57 million (€ 0.04 million) from government and non-government institutions (CPA, 2011).

Within six years, the number of RUSACCOs increased fourfold. Figure 4.2 shows the growth of the RUSACCOs in Amhara from 254 in 2006/07 to 1,084 in 2010/11.

Figure 4.2: Growth in number of rural saving and credit cooperatives in the Amhara National Regional State (2006-2011)
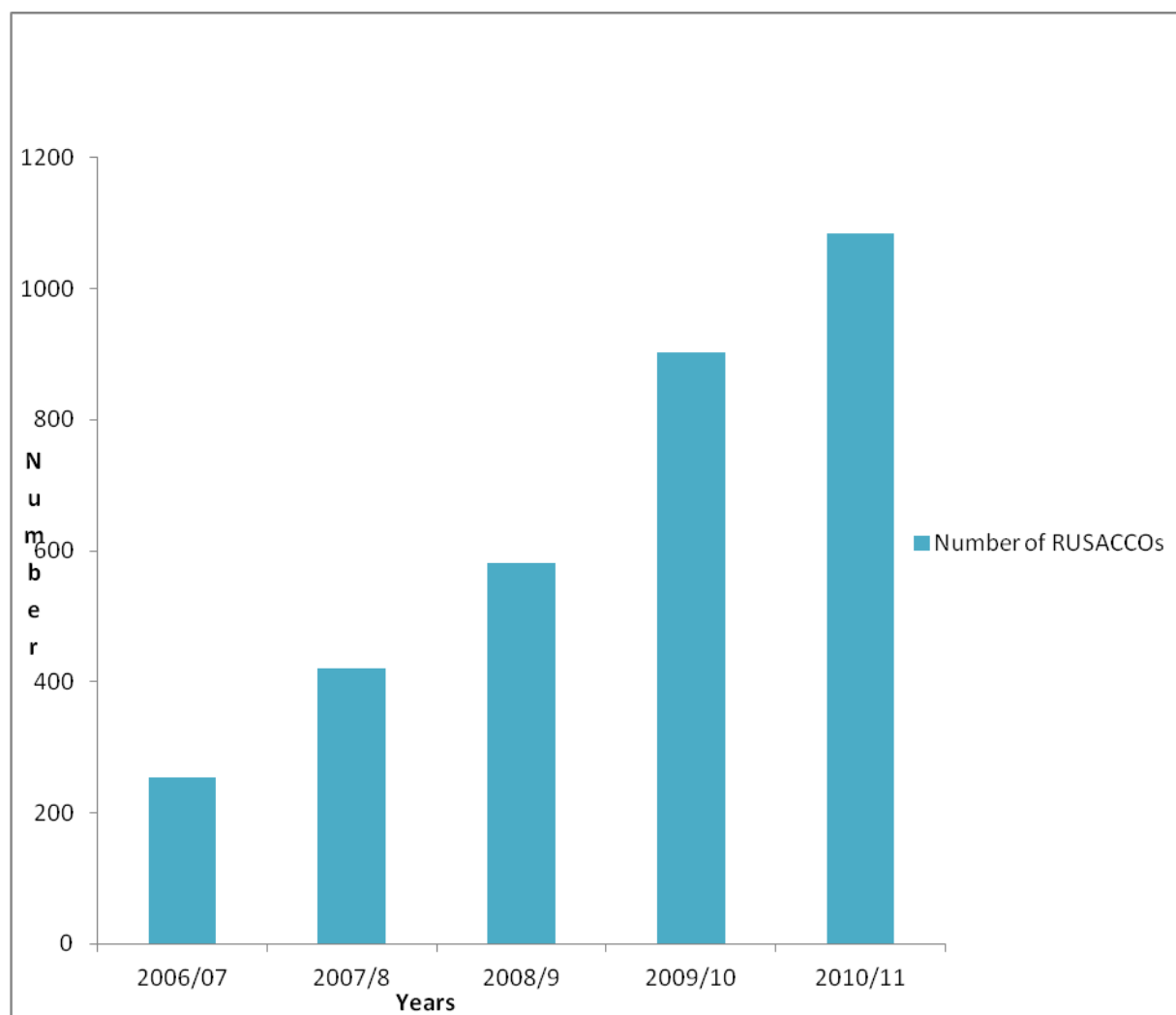
Source: (CPA, 2011)

The number of members of RUSACCOs in the Amhara region increased from 19,720 in 2006/7 to 74,693 in 2010/11. The change can be attributed to the rise in the number of RUSACCOs. For example, from the surveyed RUSACCOs, in 2006/7 the average number of members of a cooperative was around 170. However, at the time of the survey, the average number of members was 182 (see figure 4.3). This shows no significant increment in the number of members in each cooperative, but that they are still open for membership. The members of RUSACCOs are only from the *Kebele* where the cooperatives are established.

Figure 4. 3: Trend in RUSACCO members' growth
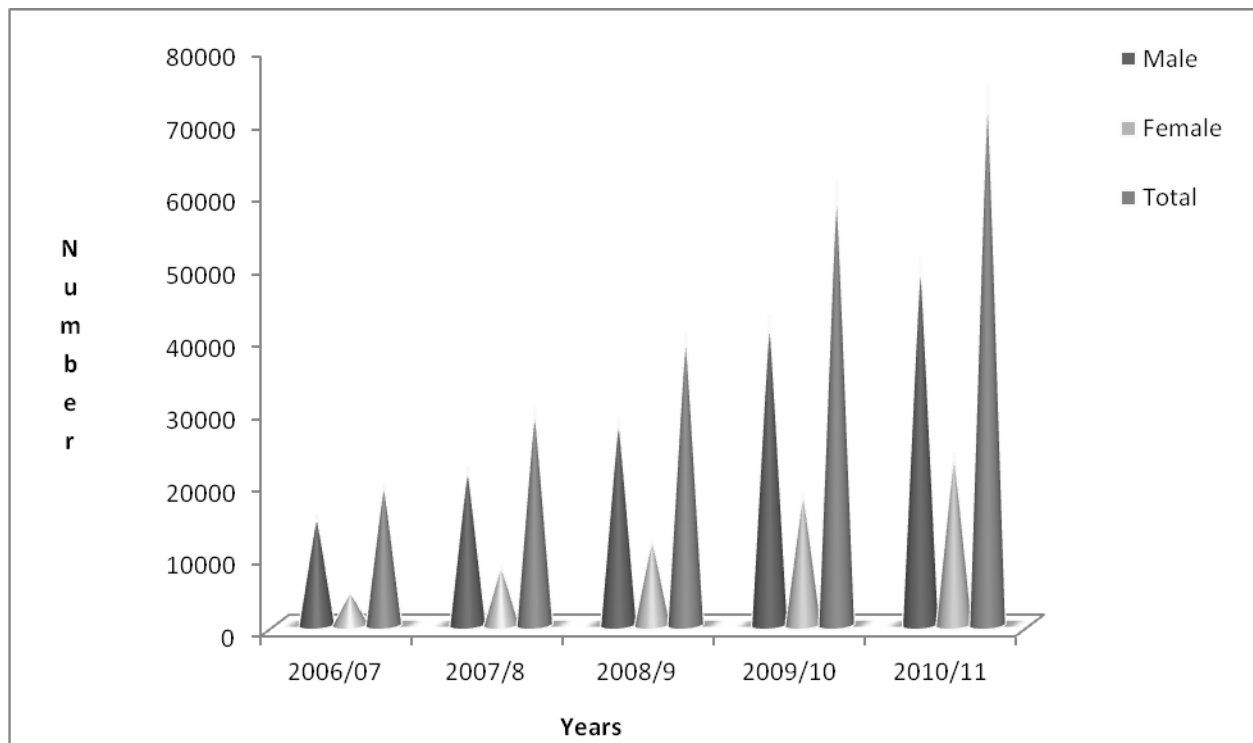
Source: (CPA, 2011)

A similar trend was observed in the amount of credit disbursed and number of borrowers in the same period. The amount of credit disbursed rose from 7.5 million ((€0.67 million) in year 2006/07 to 48.23 million Birr (€1.99 million) in year 2010/11. Moreover, the number of rural poor borrowers increased from 6,700 to 38, 900 and in 2006/07 and 2010/11 respectively. Membership of women increased from 24.94% to 32.56% between 2006/07 and 2010/11 (see Figure 4.4).

Figure 4. 4: Trend in members borrowing by gender
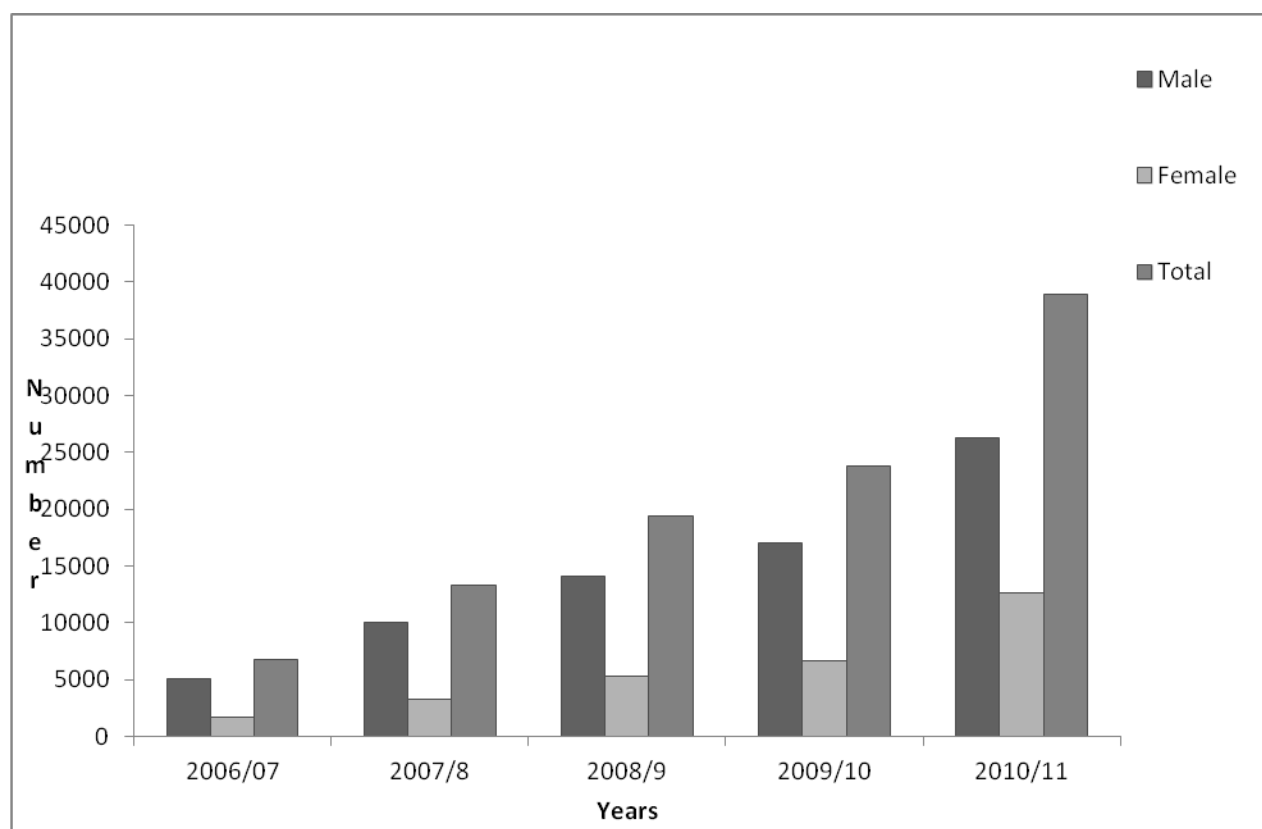
Source: (CPA, 2011)

Total savings have reached 27.1million Birr (€1.12) in 2010/11 from Birr 5.79 million in 2006/07 and the number of savers increased more than threefold within these years. This growth is attributable, in part, to increased membership and the increase in the number of RUSACCOs (sees Figure 4.5).

Figure 4. 5: Trend in members' saving by gender
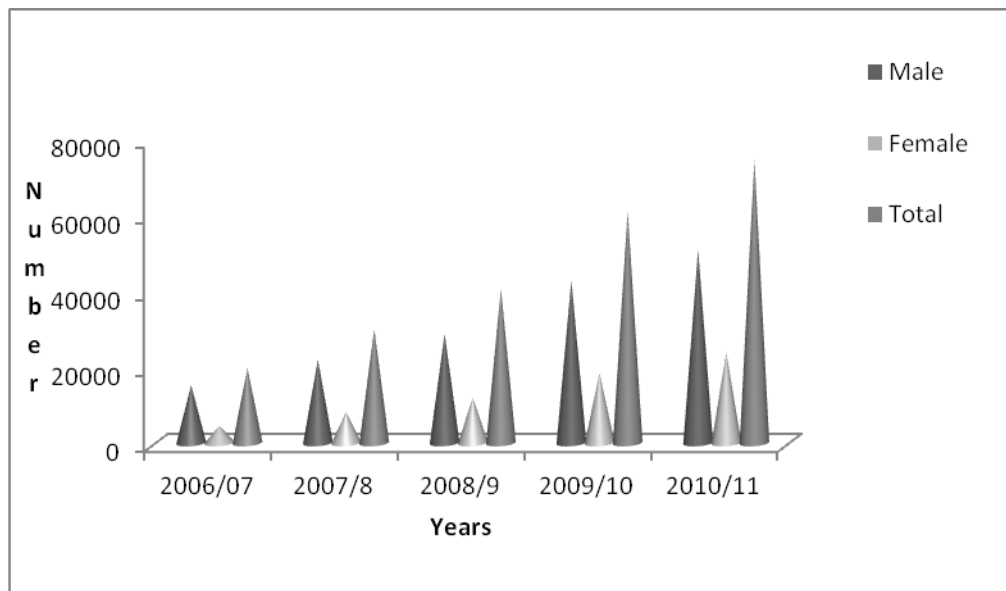
Source: (CPA, 2011)

4.3.3 Secondary Level Cooperatives Saving and Credit Unions

The secondary tier organisation is a unique type of cooperative union. In the Amhara region, the members of secondary tier cooperatives are not only saving and credit cooperatives but also non-saving and credit cooperatives (like farmers' multipurpose cooperatives, irrigation cooperatives, dairy cooperatives, etc.). The main objective of joint secondary tier saving and credit cooperatives is to utilize the meagre financial resources of the Amhara region efficiently. There are 17 secondary tier SACCOs formed by over 642 primary societies. The secondary level cooperatives (unions in the Ethiopian case) affiliate 667 primary level member cooperatives of which 333 are multipurpose cooperatives, 236 SACCOs, 15 dairy cooperatives, 14 irrigation cooperatives and 69 other types of primary cooperative (CPA, 2011).

The secondary level cooperatives (unions) provide services to member cooperatives. The Union provides financial and non-financial services to its members. The financial services include savings mobilization and provision of credit on a wholesale and retail basis. The non-financial services include training, lobbying, representation. Their total paid in capital and grant up to 2011 were Birr 12,751,141(€ 526,622.12) and 1,424,617.89 (€ 58,836.72) respectively. They

also have managed to raise a total reserve fund of Birr 8,747,639.35 (€ 361,277.51). The total savings balance reached Birr 62,000,985.04 (€2,560,640.68).

4.4 Summary and Conclusion

This chapter highlighted that cooperation is the traditional way of life for Ethiopian people. Modern cooperatives date back to the 1960s. At the beginning, the motive for the establishment of cooperatives was to minimise the problem of unemployment. Starting from 1974 the military junta considered the cooperative form of organisation as a means for achieving socialistic goals. At that time cooperation was compulsory especially for poor rural people and this forced cooperation scarred the history of the Ethiopian cooperative movement.

From 1994, the FDRE government has tried to re-establish cooperatives based on the internationally accepted cooperative principles. The current EPRDF government incorporated the cooperative model as a means to reduce the problem of food insecurity and poverty. For example, the main governmental policy documents such as the ADLI strategy 1995, SDPRP (2002-2004), the Food Security Strategy (2004-2006), the Plan for Accelerated and Sustained Development to End Poverty (PASDEP) 2006-2010 and the current Growth and Transformation Plan (GTP) 2011-2015 all acknowledge that cooperatives could and should play key roles in the implementation of development strategies.

RUSACCOs have a very short history in Ethiopia in general and in Amhara in particular, being in existence for only seven years, compared to more than 50 years for urban saving and credit cooperatives in Ethiopia. However, the number of rural savings and credit cooperatives has increased at a very sharp rate.

CHAPTER FIVE

CONCEPTUAL FRAMEWORK

5.1 Introduction

In almost all countries of the world cooperatives serve as useful innovations in addressing social and economic goals. In certain cases the particular objectives for cooperatives overlap among different countries while there are also instances where cooperatives deal with varying purposes. Of the multifaceted rationales for establishing cooperatives in less developed countries, tackling problems of food insecurity is arguably the most important one. This is particularly true of countries such as Ethiopia, wherein, a large section of the population faces chronic food insecurity problem.

This chapter examines the theoretical relationship between food security and RUSACCOs in particular as well as the latter's relationship with microfinance institutions in general. In rural areas, farmers combine factors of production: - land, capital, labor and managerial skills - to produce economic goods. However, not all these vital factors are available in adequate amount and at the right time. The basic constraining factor in those areas is capital. If institutions are in place to provide financial services such as saving, credit and insurance, people can purchase technologies that can promote production, participate in other income generating activities and create new employment. These activities can induce the capacity of the poor and help to solve food insecurity and other related problems.

5.2 The Link between Financial Institutions and Food Security

Based on the review of literature, I will adopt the conceptual framework that links RUSACCO participation with household food security. Much of Ethiopia's rural population lives in a state of chronic food insecurity. Persistent drought, land degradation and rapid population growth are the main causes of declining per capita food production (Bielli, 2001). According to Debebe (2006), traditional rural livelihoods and inefficiency in physical and human resources are the major causes for low farm income and deterioration of food security. Moreover, in Ethiopia, due to long years of cultivation, the productivity of land has declined and the population pressure has further defragmented the existing land (Gebreselassie, 2006). Before the 1950s, Ethiopia had

been a food self-sufficient country and was classified as a net exporter of food grains; for example the annual export of grain to the world market reached 150,000 tons in 1947/48 (Alemayehu 1988, quoted in Debebe, 2006). However, since the 1960s, Ethiopian domestic agriculture production has been unable to feed its own population and it has become a food insecure country and a net importer of grain (Debebe, 2006). According to Adnew (2003), the country continued to depend on food imports to a lesser extent and mainly on food aid.

The rural poor are generally vulnerable to different risks and uncertainties. The most common types of risks in poor rural economies are disease and environmental and business risk (Fafchamps, 2003). The concept of risk and risk management have been central for food security at both individual and household levels (Maxwell & Smith, 1992). For the rural poor, the income generated from agriculture depends on a variety of external factors. Shocks, particularly like droughts, in particular, are most often very hard, continuing to affect people's welfare many years after the shock (Dercon, 2004). Shocks are adverse events that lead to a loss of household income, a reduction in consumption and/or a loss of productive assets (Meinzen-Dick, 2011). Drought is the most common climatic shock in Ethiopia (Dercon et al, 2005). In anticipation of these outcomes, households, especially poorer ones, may opt for less risky technologies and portfolios in order to avoid permanent damage. Food insecure households seek to avoid the risk of falling below a minimum level of consumption of food and other basic goods that would threaten their survival. However, these risk management methods often will generate lower returns on average (Rosenzweig & Binswanger, 1993).

Kloeppinger-Todd & Ritchie (2006) identify the main objectives of rural development and rural poverty reduction strategies as promoting rural economy growth, participation and involvement of all rural people in rural development activities and reduction of vulnerability to economic, physical, and other shocks. Households in less developed countries are typically ill-equipped to cope with large shocks. Therefore, less developed countries, like Ethiopia, in their macroeconomic policy, has given due emphasis about rural financial system. According to WB (2007), rural finance has been able to include the rural poor, as with the "microfinance revolution" or financial cooperatives, it has helped to resolve a key constraint and help to poverty reduction by providing resources that allow the poor to invest and so pursue new economic opportunities.

Rural financial institutions, like RUSACCO, can help members (clients) to avoid dangerous risk coping strategies, for instance selling productive assets, borrowing from expensive local money lenders, or harvesting crops prematurely. According to Morduch (1995), rural households can smooth consumption by borrowing and saving. According to WB (2007, p.2), "*rural finance helps to reduce vulnerability through savings and access to credit which helps rural households manage seasonal liquidity shortages, and meet planned life events such as marriage and childbirth and unplanned life events such as a health emergency and death.*" Moreover, in addition to savings and credit services, access to insurance services help the poor directly mitigate some of these risks. This implies that individuals who can insure their consumption against income shocks can take advantage of the more profitable opportunities and possibly escape out of poverty. On the other hand, others are trapped with low return, low risk activities, and in vicious cycle of poverty, even though their inherent risk preferences may fundamentally be the same (Zimmerman & Carter, 2003). These techniques can safeguard consumption from income variability (Zeller et al, 1997). For instance, a study by Elbers et al (2009) has pointed out that, in the absence of risk, the consumption level of the median household would grow on average by 3.5% per year over the first 20 years and would continue to grow rapidly thereafter.

Financial services are intermediate inputs and building blocks in efforts to increase the productivity of available physical and human resources in the management of risk (Gonzalez-Vega, 2003). Financial services have the potential to stabilize consumption and strengthen households' wealth and income. This is a much broader concept than that of providing credit for particular income generating activities such as agricultural production and, more recently, off-farm activities. Many development programs were narrowly focused on the enterprise or farm, without taking into consideration the socio-economic context within which the household or individual members invest, produce, and consume (Zeller et al, 1997).

According to Zeller (2000), there are two principal effects of improved access to financial services on user households. The first and traditional argument for provision of services by MFIs is it can raise consumption and future investment and asset accumulation through promoting the expected value of income. Second, it can help them cope in hardship and to satisfy basic consumption needs. Poor segments of the population tend to value financial services that address

the risk-coping motive relatively more, while richer households tend to place higher value on financial services that generate income and aid the accumulation of assets.

According to the WB (2007), access to financial services helps small farmers to improve productivity through investment in production equipment, irrigation, purchasing farm inputs, hiring labour, and also to invest in post-harvest handling, processing, and marketing and finally help to achieve rural economic growth. Major agricultural development and development of related processing and marketing facilities in rural areas and real improvements in the incomes of rural poor have happened almost nowhere without access to financial services. In addition, rural finance can also help create opportunities for non-farm economic activities in ranging from handicrafts to commerce and telecommunications.

The majority of rural people do not get banking services from commercial banks. As a result, most economically active rural people depend on family support or on high-cost informal sources like traders or moneylenders. Cooperation between economic agents has existed since the beginning of mankind. History shows that human beings evolved from living individuals to collaborators and discovered that through unity and cooperation some problems were solved with greater ease, less sacrifice and risk (Castilho et al, 2009). According to the Food and Agriculture Organisation (FAO) Director General Jose Graziano da Silva,

> *"We have the means to eliminate hunger and malnutrition. What is needed is the establishment of an enabling environment that allows small producers to take full advantage of available opportunities. Strong cooperatives and producer organisations are an essential part of that enabling environment[13]."*

Frantz (2001) defines a cooperative as a social process in which a group of people seek answers and solutions to their common problems through a collective venture. Merrett (2001) states that cooperatives are the foundation for a better life in rural communities through imperative contribution to employment opportunity, livelihood progress and food security at household level. Veerakumaran (2003) also underscores the critical role of cooperatives in enhancing household food security.

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[13] *http://allafrica.com/stories/201210190202.html 2012*

Thus, the concept of cooperation and cooperativeness used in this research work as a union and coordination of resources and efforts of co-operators to carry out common activities in order to achieve food security at household level. In short, the cooperative sector is of exceptional importance to society as it represents citizens` initiatives benefiting local development in a sustainable way. Financial cooperatives can provide financial services to a significant part of the rural population thereby filling an important gap in the continuum of financial service providers from commercial banks to the informal providers such as village moneylenders, friends and relatives.

Cooperatives help to empower their members economically and secure their livelihoods and play a greater role in meeting the growing demand for food which in turn contributes to alleviating poverty, promote food security and eradication of hunger (FAO, 2012). Cooperatives are most favourable organisations for poor people to come together and pool their resources to meet their demands. The minimum resources need for its formation are, open membership; solidarity and self-help mostly needed by the low resources people, availability of supports from government and donors etc. make cooperatives poor-friendly. As a result, we can say that almost all of the cooperative members are people who are exposed to various risks and are often outside of the protection of modern insurance services.

Rural saving and credit cooperatives (RUSACCOs) provide their members with savings, credit and training services. RUSACCOs operate, like other financial institutions, under the macro policy frame of the government. If households acquire financial services and efficiently use these resources, they can generate additional income. Additional income with households' risk coping mechanisms helps them to achieve food security. However, the establishment of RUSACCO on its own cannot solve the problem of food insecurity. Rural poor should join RUSACCO and also actively participate in both economical activities (like, savings and borrowing) and cooperative leadership. Active participation of members will make saving and credit cooperatives more sustainable financial institutions.

The conceptual framework of this research work is based on the contribution of rural finance to food security. If the saving behaviour of the poor improves, then rural people can easily utilise their own limited financial resources for production activity and gradually their income will increase. Debebe (2006) indicated that an increase in income leads to improved food security. If

households generate adequate income, their purchasing power will increase. That means they can purchase food and secure the household against disaster.

The expansion of rural saving and credit cooperatives (RUSACCOs) is based on the concept that poor households are affected by lack of access to, and inadequate provision of financial services. Cooperatives can accelerate the process of development and participation of the rural population in their activities (Sanyang & Huang, 2008). It is apparent that unless the rural poor are willing to participate the notion of sustainable RUSACCOs and their benefits cannot be realised. The expectation is that the rural people participation in RUSACCOs should not only by saving and borrowing efficiently but also by getting involved in different income generating activities. Better incomes for poor households translate into better nutritional intake both in quantity and quality (Ahmed et al, 2003, p.17). The positive association between membership in RUSACCO, household income, and household food security is depicted in Figure 5.1.

Conceptual Framework
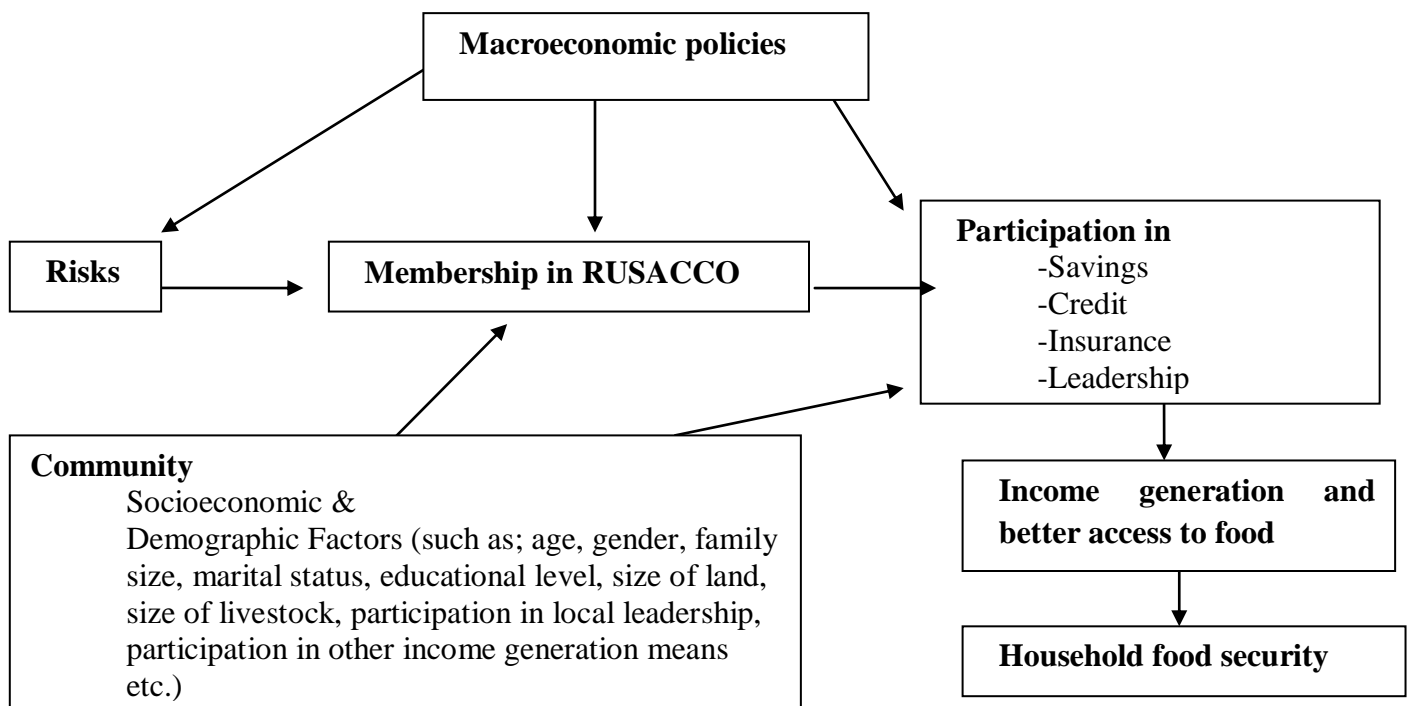
Figure 5. 1: Rural saving and credit cooperatives and their impact on household food security *(adapted from Zeller, Schrieder et al. 1997)*

CHAPTER SIX

RESEARCH METHODOLOGY

6.1 Introduction

The previous chapter discussed the conceptual framework of the research that relates rural saving and credit cooperatives to household food security. This chapter incorporates the description of the study area, hypotheses, the research design, type and nature of data, sampling techniques, data collection procedures and method of data analysis. Note that more detailed presentation on data analysis methods are given in subsequent chapters.

The description of the study area presents information about the ANRS in general and some information about the sampled *woredas* in particular. ANRS is the third largest in terms of area and second most highly populated regional state under FDRE. The region has 128 *woredas* of which 50% are food insecure (USAID, 2000). This research attempts to account for such diversity by including one *woreda* each from the food secure and food insecure parts of the region.

Both qualitative and quantitative data were collected. Focus group discussion and key informant interviews were the main sources of qualitative data whereas sampled RUSACCO member and non-member households were the source of quantitative data. Sampled households were selected randomly from *kebele* administration residents and the corresponding RUSACCO members list. Collected data are systematically arranged and analyzed using appropriate analysis tools.

6.2 Description of the Study Area

6.2.1 Amhara National Regional State (ANRS)

The Federal Democratic Republic of Ethiopia (FDRE) has nine administrative regions. This research work was undertaken in ANRS. There are three reasons why the Amhara region was selected. First, it is a highly populated region and, compared to other regions of Ethiopia, the majority of the population resides in rural areas. The second reason is that there are relatively high numbers of rural saving and credit cooperatives and a relatively long history of the

cooperative movement in the region. Finally, it is easily accessible and no language barriers exist for the researcher to undertake focus group discussion and key informant interviews.

The Amhara Region is located in the North West part of Ethiopia. The region covers an area of 154,709 km^2, which is 11% of the total area of the country. ANRS borders the Tigray Region in the North, the Oromiya region in the South, the Afar in the East, the Benishangul-Gumiz region in the Southwest and the country of Sudan in the west. The Amhara region is a land of diverse topography, consisting of mountains, lowlands, gorges and river valleys and ranging in height from 500 to 4620 masl. The annual mean temperature for most parts of the region is between 15 degrees centigrade and 21 degrees centigrade (see: http://www.ethemb.se/Regional%20States/Amhara_regional_state.htm).

The CSA's total population estimate for the Amhara region for 2013 is 19,239,302 with a fifty-fifty split between the sexes. About 16,631,540 people (86.44%) are rural residents (MoFED, 2013). The %age of the rural population is above the national average of 85%. The annual population growth in the ANRS is 2.7%. This rapid population growth rate has led to severe land shortages and rapid degradation of natural resources. In the Amhara region, 9% of households have insufficient land to meet their food needs. Expenditure on food accounts for 55% of household expenditure (Dlamini & Brislin, 2006).

Agriculture is the dominant economic sector in Amhara, accounting for 51% of the region's GDP. Cereals comprise more than 80% of cultivated land and 85% of total crop production. The main cereal crops in the Amhara region are teff, maize, wheat, sorghum, barley and finger millet. Oil crops and pulses are the other major categories of field crops. Ethiopia possesses the largest livestock population in Africa estimated to include 50.88 million cattle, 47.73 million sheep and goat, 42.05 million poultry, 8.88 million equines, and 0.81 million camel. However, the sector is characterized by very low productivity. About 25.05% of the cattle, 33.09% the sheep, 22.21% of the goat, 29.53% of the equine, 30.29% of the poultry, and 17.88% of the beehives in Ethiopia

are found in the Amhara region (CSA, 2010). However, according to the bureau of agriculture, 42% of the region's population suffer from chronic food insecurity.[14]

The ANRS is generally divided into high potential (food secure) and low potential areas (food insecure) for the purposes of the regional development strategy. A high potential area is defined as an area of optimum and good rainfall distribution. Fertility of the soil is good and land conditions are favourable for crop production. On the other hand, low potential areas are those which have low rainfall with uneven distribution. Land degradation and low fertility of the soils prevail severely. Actual and potential productivity of crops and livestock is low.

The regional government has its own food security policy[15]. The food insecure is the rural poor who lack the ability to acquire food either by producing it themselves or the income to purchase it from the market. The rural poor do not have full access to formal financial institutions such as commercial, insurance and construction banks. The financial institutions that are found in the region mostly serve only the urban population.

This research was conducted in two purposely selected *woredas* of the region; i.e., Lay Gayint and Dejen *woreda* (see Figure 6.1 & Figure 6.2). The *woredas* were selected for the following reasons. To start with, the number of RUSACCOs in Lay Gayint *woreda* is 17 and that of Dejen is 15 which are higher than the regional average number of RUSACCO (11 per *woreda*) in the region. Additionally, the history of RUSACCOs in these *woredas* is relatively long. They have been functioning for a relatively long time; for instance, the first RUSACCO in the region was established in Dejen *woreda*. Finally, more or less these two *woredas* represent the food secured and insecured areas of the region and help to examine the variation in impact of RUSACCOs on households' food security.

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[14] http://www.amhboard.gov.et/12/05/2011

[15] According to the food security policy of the region, the availability of food remains to be the only necessary pre-condition for households' food security. It is in this context that ensuring households' access to food through diversified efforts has become the regional government's deep concern.

6.2.2 Lay Gayint *Woreda*

Lay Gayint *woreda* is located in the South Gonder Administrative Zone. The *woreda* town, Nefas Mewchia, is 175 km north of Bahir Dar. The *woreda* covers total area of 1,320.3 km^2 with a total population of 242,306. It is a chronically food insecure *woreda*. Agricultural performance is poor mainly due to environmental degradation and drought. The area has mixed farming (crop production and livestock). Oxen are essential for ploughing. Sheep, goat and cattle sales are the main source of cash income. Local agricultural labour and urban and migratory labour are important sources of income for the poorer sections of society.

The involvement of donors in the establishment of RUSACCOs has been very high. This *woreda* receives assistance from the federal government's large-scale Productive Safety Nets Program[16], which pays people in food or cash in exchange for work on infrastructure and conservation projects. In 2011, 3,134 households benefited from food emergency aid (Rangil, 2012).

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[16] The Productive Safety Net Programme (PSNP) was set up in 2005 by the government of Ethiopia as part of a strategy to address chronic food insecurity. The program provides cash or food to people who have predictable food needs in a way that enables them to improve their own livelihoods and therefore become more resilient to the effects of shocks in the future (HPN, 2012).

Location Map of Study Area of Lay Gayint Woreda/District
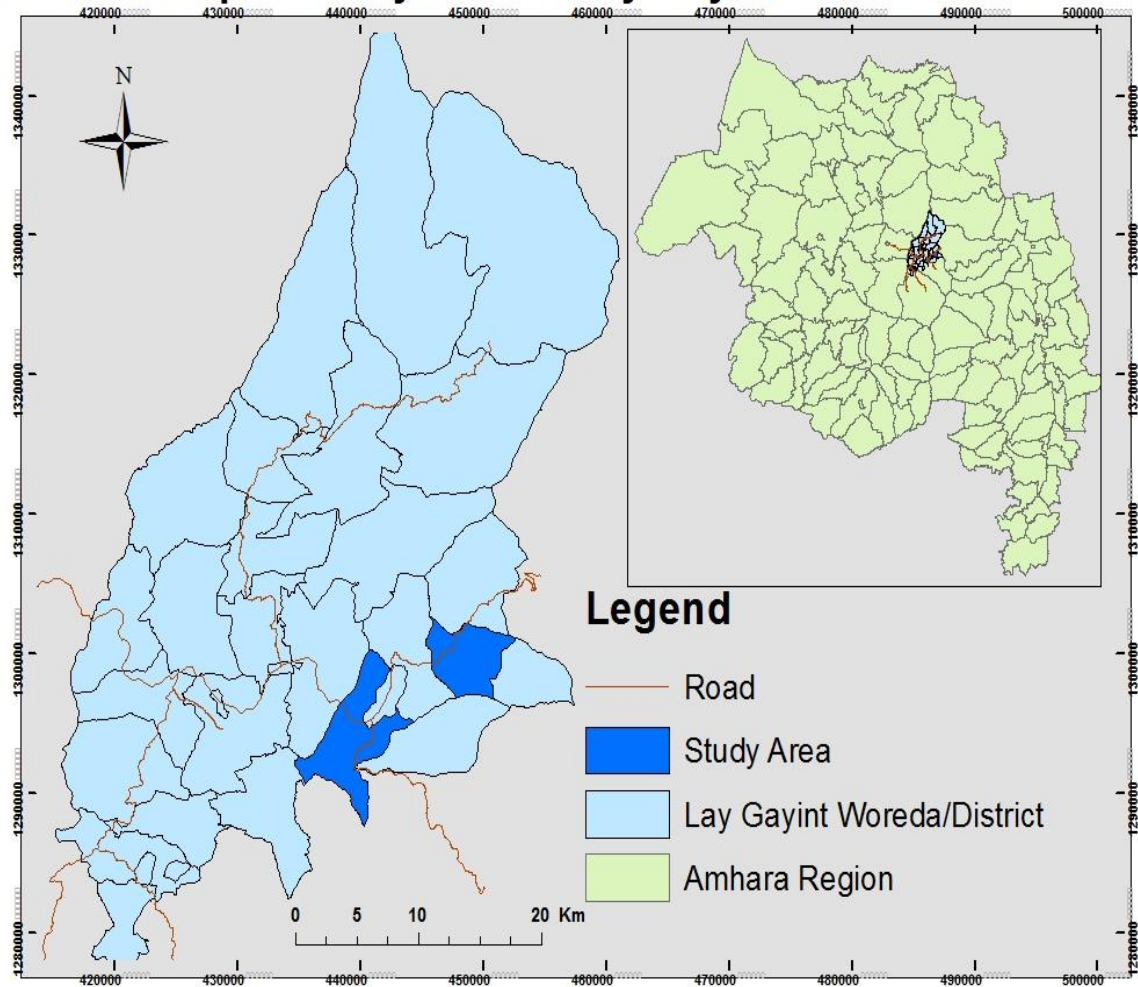
Figure 6. 1: Lay Gayint *woreda* location map

6.2.3 Dejen *Woreda*

Dejen *woreda* is located in the East Gojam Administrative Zone. Dejen is 335 km south east of the region capital Bahir Dar. It lies in a mid-altitude agro ecological zone. The *woreda* covers total area of 620.97 km2 with a total population of 127, 818. Gojam is considered one of Ethiopia's principal surplus producers, although the area faces serious issues relating to natural resource degradation. It is considered a food secure *woreda*, and thus does not receive assistance from the federal government's Productive Safety Nets Program.

Loacation Map of Study Area of Dejen Woreda/District
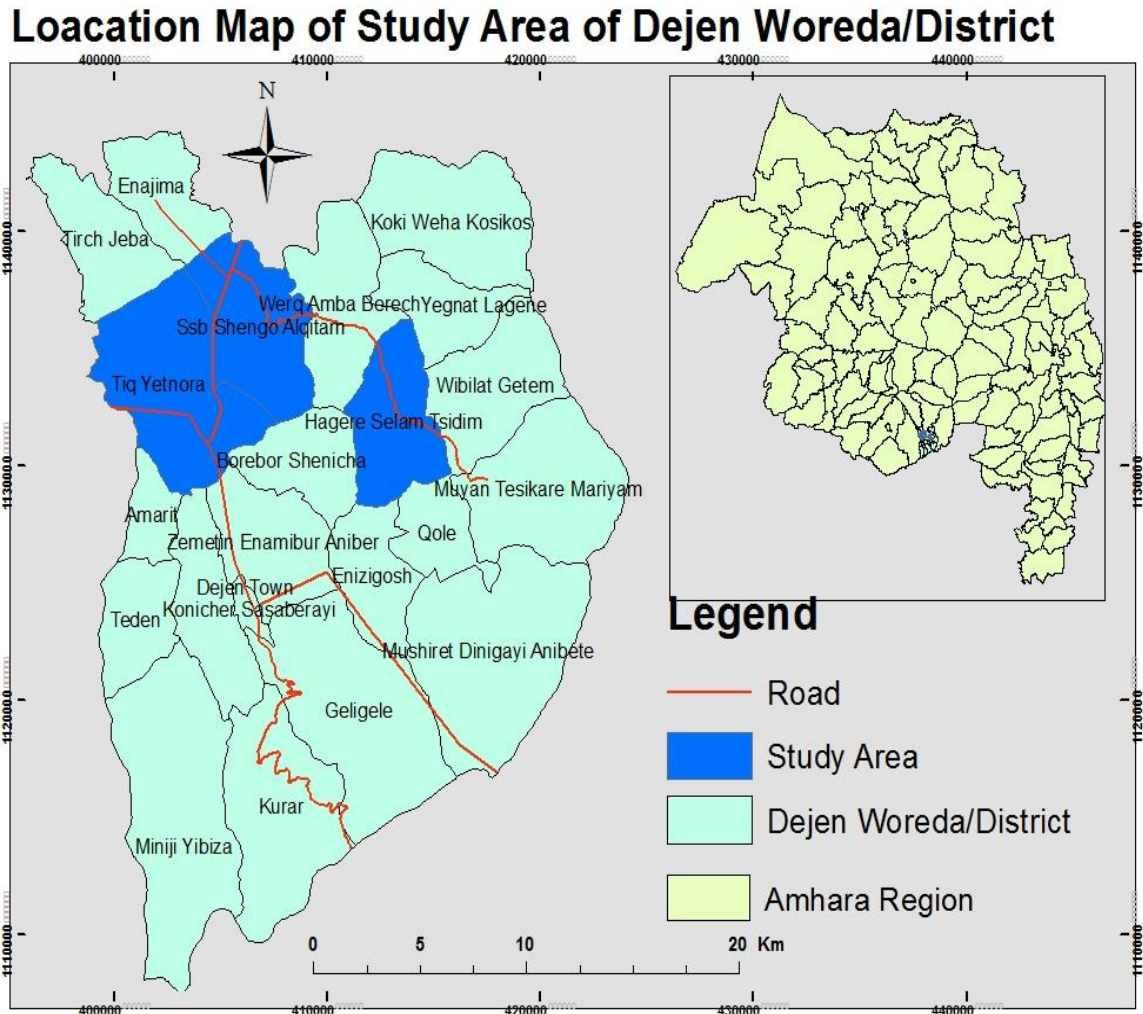
Figure 6. 2: Dejen *woreda* location map

6.3 Research Proposition and Hypotheses

The study focuses on three main areas. These are RUSACCO membership, participation in different activities of the RUSACCOs and finally the impact of RUSACCO membership and participation on household food security. The researcher uses both a qualitative and a quantitative research approach. Issues such as the reasons for the establishment of RUSACCOs and the level of members' satisfaction are not easily quantifiable. On the other hand, determinants of membership and participation in saving and credit activities, and the impact of RUSACCOs on member households' food and total consumption expenditures are quantifiable. The propositions and hypotheses are based on the literature reviewed in chapters two and three, and the researcher's observation and experience on the subject, especially in the context of study

area. In this regard, the researcher had served for more than five years (1999-2005) in the Amhara Region Cooperative Promotion Agency at different levels.

Propositions:

1**. RUSACCO establishment and membership**

> RUSACCOs start in the Amhara region because members believe they can provide financial services at a fair and reasonable interest rate and they have no other alternative to formal financial institutions.

2. RUSACCO members' participation

> Members of RUSACCOs in the Amhara region actively participate in cooperative decision making and in saving and credit activities in their RUSACCOs.

3. Impact of RUSACCO on member household food security

> The financial services of RUSACCO satisfy members' needs and improve directly or indirectly, member households' food security.

Hypotheses:

1. Determinants of RUSACCO membership

H_0: Socio-economic and demographic variables do not have influence on RUSACCO membership H_1: Socio-economic and demographic variables have influence on RUSACCO membership

2.1 Determinants of members' saving

H_0: Socio-economic and demographic variables do not have influence on members' amount of saving in a RUSACCO.

H_1: Socio-economic and demographic variables have influence on members' amount of saving in a RUSACCO.

2.2 Determinants of members' borrowing

H_0: Socio-economic and demographic variables do not have influence on members' amount of borrowings from RUSACCO.

H_1: Socio-economic and demographic variables have influence on members' amount of borrowings from RUSACCO.

3. RUSACCO's impact on member households' food security

H_o: RUSACCO membership does not improve household food security.

H_1: RUSACCO membership improves household food security.

6.4 Research Design and Source of Data

This study used two types of data: qualitative and quantitative data. Combining qualitative studies with quantitative one can increase the perceived quality of the research (Demeke, 2001). The qualitative research approach helps to understand the 'how' and 'why' of the community perceptions and practices through probing views about reasons for the establishment of RUSACCOs, attitudes towards the benefit of RUSACCOs, strengths and weaknesses of RUSACCOs and related issues. The qualitative research approaches of data collection employed in this study were key informant interviews and focus group discussions (FGDs). A key informant interview is a qualitative in depth interview with individuals who have good knowledge about the RUSACCO. On the other hand, a focus group involves a number of people usually 4-8 persons often with common experiences or characteristics (Law et al, 1998). In this regard the researcher discussed relevant ideas (why the RUSACCO established, why/ why not people join RUSACCOs, what member participation in RUSACCO is? What are their contributions for members' food security? Strengths and weakness of RUSACCO and other similar issues (you can see the detail in appendix 2). The interviewees for key informant interviews were RUSACCO employees, lowest (*woreda*) level government cooperative facilitators, cooperatives saving and credit union managers, and regional level cooperative promotion experts.

Conversely, the quantitative approach can help the researcher to produce quantitative data from sample households, which in turn, can help the researcher to generalize about the study area. To generate quantitative data regarding the rural poor, a survey was undertaken from randomly selected RUSACCO member and non-member households. The focus of the survey was on the socio-economic and demographic backgrounds of the selected rural people. For this purpose, RUSACCO members as well as non-members were incorporated. Interviews were conducted with households that are members of the cooperative and households in the locality that were not members of the cooperative. Moreover, secondary sources used included the documents of the

office of cooperative promotion at different levels, cooperatives saving and credit unions, and primary rural saving and credit cooperatives.

In this study, a panel design was used to generate relevant quantitative data. Panel data refers to data sets consisting of multiple observations from sampled individuals.The main characteristic of panel data is that it combines time series and cross sections. This is an advantage in terms of the amount of information available. Panel data, according to Hsiao (2005), have two main advantages over cross sectional data. Firstly, panel data usually contain a greater degree of freedom and less multi-collinearity than cross sectional data. Secondly, panel data have greater capacity for capturing the complexity of human behaviour than a single cross-section or time series data. On the other hand, Lansing & Morgan (1980) states that the main advantages of the panel study are reduction in the need for recall, the ability to get data on changes in attitudes, expectations, and cash balances, which the respondent may forget over a period of time.

The data on sampled rural households were collected twice. The gap between two data collection periods was around a year. The first round data collection was in January 2011 and the second round was in December 2011. Data collection took two months in total.

Commonly used conventional indicators were used in order to effectively capture the impact of the RUSACCOs. In this impact assessment study, total consumption expenditure and food expenditures are considered as impact indicators. These indicators are derived as a lump sum estimate based on the recall of a household head. Obviously, the decision to use these variables as indicators to measure the impact of interventions is based on their eventual credibility, cost and ease of interpretation.

In this research work, the household is the unit of study. According to McCarthy & Edwards (2011, p.115), a household is a physical structure that can contain an individual or social group that may or may not be considered a family, who co-reside usually involving sleeping under the same roof and typically sharing a range of domestic activities.

In addition to primary sources of data, secondary sources of data were used to undertake this study. Secondary sources used in this study include; the documents of the office of cooperative promotion at different levels, cooperatives saving and credit unions, and primary rural saving and credit cooperatives.

6.5 Data Collection Procedures

Contact was initially made with *kebele* administrators and the *woreda* cooperative promotion desk to obtain consent for participation. To undertake interviews, an interview questionnaire was prepared. The questionnaire was then translated to the local language of Amharic and was pre-tested for consistency, clarity and to avoid duplication and to estimate the time requirement during data collection and generally to improve the questionnaire. Moreover, the FGD and Key informant interviews were held first. This arrangement had an advantage to accommodate participants' feedback in the final survey questions. According to Demeke (2001), focus groups are useful to generate new ideas for hypotheses, questionnaire items and the interpretation of survey results.

The data collection was conducted by three parties. These were the researcher, enumerator supervisors and enumerators. The researcher followed the whole data collection activities, and provided the supervisors and enumerators a two days' training about data collection in general and the questionnaire in particular. One supervisor was assigned in each *woreda*, who was a cooperative promotion expert. Their role was to supervise the enumerators' work together with the researcher and to facilitate the group discussion and key informant interviews. A total of 15 enumerators who had a minimum of a college diploma qualification and previous data collection experience were recruited. They were fluent speakers of the local language, Amharic. The enumerators collected data from sampled households using the structured questionnaire.

The researcher with the help of facilitators was undertaken the group discussion and key informant interviews. With the consent of participants, a voice recorder was used to record what the participants said in FGDs and key informant interviews. This helped to freely engage in the conversation without worrying about taking notes and to observe their non-verbal responses. Moreover, during the questionnaire pre-test stage it was thought that farmers might have fear and would not feel free to tell the truth and it may be due to the past difficult history of cooperative in Ethiopia. Therefore, the interviewers explained the objective of the data collection, and that there was no political link requesting them to provide honestly the actual information.

6.6 Sample and Sampling Method

Sample households were selected for the study in such a way that they are representative of the larger population. According to Bahtia et al (2007, p.75), "sampling helps to obtain maximum

information about characteristics of population with minimum cost, time and labour." In this study, at first stage, two *woredas* were selected purposely from the list of ANRS *woredas*. These are Lay Gayint *woreda* and Dejen *woreda*. In the second stage, a total of six RUSACCOs were selected randomly from the selected *woredas* cooperative promotion office RUSACCOs' lists. However, among the selected RUSACCOs one RUSACCO from Lay Gayint *woreda* was new and there had been no borrowing activity at that time. Therefore, it was not relevant to undertake survey activity in that new RUSACCO. To balance the information in two selected *woredas*, the sample households' size from the other two RUSACCOs were increased. That means the actual survey was undertaken on five RUSACCOs. These RUSACCOs were; Edget Ber, Alemtshay, Addis Alem, Tesfa and Gojam Ber. The researcher took sample households from the list of residents of the *kebele* administrations.

The households in each *kebele* were then stratified into members and non-members of RUSACCO groups. The stratification helps to include elements from RUSACCO member and non-member groups. According to Welman and Kruger (2002, p.56), "stratification ensures representativeness of different groups irrespective of sample size." The study involved an equal number of respondents from member and non-member groups. The sample size was 15% of members of the sampled RUSACCOs, and a similar number of non-members from the same *kebele* administration. In total, 300 households (150 members and 150 non-members) initially were selected by using systematic random sampling. Thus, the sample size is expected to represent the total population. Systematic random sampling is a statistical method involving the selection of elements from an ordered sampling frame (Demeke, 2001). According to Endaweke (2011), the major advantage of systematic sampling is its simplicity and flexibility. In this study the sampling frames were *kebele* administration residents' and RUSACCO members' lists.

In the first round, 134 members and 127 non-members, totalling 261 households were interviewed. In the second round the total number of respondents decreased to 251, 125 members and 126 non-members. The total number of observations in the two-year panel was 512 of which there were 259 and 253 members and non-members respectively (see table 6.1). The attrition of the respondents was mainly due to migration to urban centres and lack of willingness to participate in the second round. Moreover, a total of 11 FGDS and 6 key informant interviews were held (see appendix 5 & 6).

Table 6.1: Sample households distributions

RUSACCO	*Woreda*	Total number of members	Year 1 (First round)			Year 2 (Second round)			Total		
			Members	Non-members	Total	Members	Non-members	Total	Members	Non-members	Total
Edget Ber	L/ Gayint	120	33	30	63	32	30	62	65	60	125
Alemtsehay	L/ Gayint	103	32	30	62	31	30	61	63	60	123
Addis Alem	Dejen	115	19	18	37	18	17	35	37	35	72
Tesfa	Dejen	297	20	21	41	15	21	36	35	42	77
Gojamber	Dejen	283	30	28	58	29	28	57	59	56	115
Total		**918**	**134**	**127**	**261**	**125**	**126**	**251**	**259**	**253**	**512**

6.8 Method of Data Analysis

The research adopted both qualitative and quantitative analytical tools so as to provide a better understanding of the research problem than could be achieved through using either of the tools alone (Creswell & Clark, 2007).

1. Qualitative Analysis

The Data collected from the group discussion and key informant interviews were organised in different themes and sub-themes in line with the objectives of the study, that is; the socio-economic and demographic profile of members and non-members, the socio-economic and demographic factors that affect members' participation in terms of decision making, savings and credit, and the impact of RUSACCOs on households' food security. Similar responses were put together under one theme or sub theme in order to avoid generic and uncoordinated information. These actions helped to ensure that no information is left out. Then the collected data analysed using qualitative method of data analysis (such as, narrative summary). Moreover, from participants some responses were used as quotations in the presentation of the research findings.

2. Quantitative Analysis

The survey information were cleaned and coded. Then, the data were analyzed by using descriptive statistics and inferential statistics. Households' decision to join or not to join

RUSACCO was analysed by using binary probit model. Linear regression model was used to identify factors that affect RUSACCO members' amount of savings. Tobit model was used to identify the determinants of RUSACCO members' amount of borrowing. Propensity score matching (PSM) was used to analyse the impact of RUSACCOs on households' food security. For these purposes appropriate statistical softwares were used (SPSS 18 and Stata 11). In addition, tables and graphs were used to show the respondents' variability on those hypothesised socio-economic and demographic variables and to present the output of each quantitative research models. Then, the results of those models were interpreted. Lastly, both qualitative and quantitative results were presented together for a complete research report. Note that more detailed presentation on quantitative data analysis methods are given in subsequent chapters.

6.9 Summary and Conclusion

The chapter elaborated on the description of the study area as well as the research methodology for the study. It highlighted several rationales for choosing the particular study area. Accordingly, the ANRS represents a sizeable portion of the country both area-wise and population-wise. Half of the region's 128 *woreda*s are food secure while the other half is food insecure. The two sampled *woreda*s, i.e. Lay Gayint and Dejen, are drawn from the non-food secured and food secured localities of the region respectively. Initially, it was planned to select a total of six RUSACCOs which, nevertheless, had to be scaled down to five for reasons explained above. All in all, 150 members and 150 non-member households were selected for survey randomly using the list of *kebele* residents' as well as RUSACCO members' lists.

Data deemed to be pertinent was gathered using both qualitative and quantitative approaches. The main sources of qualitative data were key informant interview and focus group discussion. The source of quantitative data was sampled households survey. For the purpose of this research, the questionnaire was prepared and pilot tested on different individuals (other than the sampled households). The questionnaire was again revised based on the results of the pre-test, and the key informant interviews and focus group discussions. The same kind of questionnaire for the same sampled households was administered again one year later to give panel data. Collected data were cleaned and organised. Finally analysis of data was carried out using appropriate statistical softwares.

CHAPTER SEVEN

MEMBERSHIP IN RURAL SAVING AND CREDIT COOPERATIVES

7.1 Introduction

This chapter deals with a number of important themes. It seeks to elaborate the rationales for setting-up RUSACCOs and also identify possible reasons as to why the rural poor join or not join a RUSACCO. It also goes further to pinpoint the major socio economic and demographic factors that cause rural poor to join RUSACCO.

7.2 Why are RUSACCOs Established?

7.2.1 Reasons for the commencement of RUSACCO in rural Amhara

The current Ethiopian government designed different techniques (such as; providing agricultural credit through farmers multi service cooperatives, strengthening microfinance institutions and RUSACCOs) to avert the problem of rural finance and to promote ADLI in rural Ethiopia. Starting from year 1995, to solve the collateral problems of the rural poor, the regional governments acted as intermediaries between banks and farmers. The regional governments used their federally allocated budget as collateral to borrow from banks and lend these funds to farmers for the purchase of agricultural inputs. This procedure enabled banks to lend a great deal of money to farmers. For instance, at the national level the volume of agricultural credit grew from 81 million birr (1.05 million €) to 150.2 million birr (16.21 million €) between 1995 and 1999 (MoA, 1999). On the other hand, there were cases of default among borrowers, which necessitated repayment out of the budget allocations of the regional administrations. In addition, this arrangement forced regional governments to involve civil servants to enforce loan repayment.

Regional governments gradually withdrew from such complicated involvement in agricultural credit. However, the gap had to be filled by appropriate financial institutions that suited the condition of the rural poor.

The Focus group discussions helped to know the reason why they joined RUSACCO. Participants cited several reasons, most of which related to lack of other financial institutions to fulfill their needs. For instance;

A member of Gojam Ber RUSACCO (male, 41) said that:

> *"before such credit arrangements by regional governments became available we were not using improved agricultural inputs, rather we used natural fertilizer and local variety seeds. Now our land can't grow without fertilizer. The price of the fertilizer has increased over time and we can't afford the price in cash. Therefore, we need fertilizer and hence we need financial services."*

In rural Ethiopia, land perhaps is the severest constraint; therefore, self-employment in small scale businesses is the best feasible option for income generation. The participants in the focus group discussions raised the issue of the gradual decline in the size of farming land and the increase in landlessness due to high population pressure. They badly need other alternative businesses. The rural poor, to lead their life, have tried to participate in non-farm activities like, petty trade, handicrafts and other income generation activities. Yet, they lack financial resources to run those activities. Therefore, they need loans from financial institutions in order to run non-farm activities.

A member of Alemtsehay RUSACCO (age 30 male) said that:

> *"our fathers and grandfathers had a lot of land resources and the fertility of their land was also excellent. So they had sufficient products and income from crop production. Now we have very small plots of land and its fertility is very low. We need additional income generation activities. Hence, we need financial institutions that can help our effort."*

Therefore, it was recognized by the government and other development partners that the government should play an active role in formulating appropriate fiscal and monetary policies to support the establishment of financial institutions to mitigate the financial gap of farmers. Currently, there are two options for the rural poor to get institutional financial services. These are microfinance institutions and saving and credit cooperatives. Microfinance institutions are

financial institutions that can provide financial services to individuals and groups who are overlooked by the formal banking and financial sector. Deposit taking microfinance institutions are "credit first" organisations and are usually funded by others (government or non-governmental organisation).

In this regard, in the last ten to fifteen years in the Amhara National Regional State (ANRS) a number of microfinance institutions serve the rural poor. One of the best-known in Africa is actually located in this region of Ethiopia and is called the Amhara Credit and Saving Institution (ACSI). According to Yelewem-Wessen (2008), despite being one of the largest MFIs in the country as well as on the continent, ACSI still does not reach a very large number of the poor.

The coverage of the formal financial institutions in rural Amhara is quite low. To run the day-to-day activities smoothly, financial institutions that can provide financial service at fair price are required.

A board member of Addis Alem RUSACCO (male, 35) said that:

"when we request a loan from a microfinance institution, the Kebele administration must approve our request. That means, we should cover transportation cost to the nearby town and pay perdiem for those officials. Therefore, it is an additional cost for us. That is why we don't like to use the microfinance institution (ACSI)."

Managing rural credit in Ethiopia is a very hard task because of poor infrastructure and sparsely populated rural areas. So interest rates are high to allow MFIs to cover the costs of administration. Respondents also reported that it was not easy for individuals to find financial institutions that can provide service at a fair interest rate.

A board member of Gojam Ber RUSACCO (male, 41) stated that

"we need a financial institution that can offer a fair interest rate. The interest rate of the microfinance institutions is around 18% and it is very hard to cover this much interest. Therefore, we need a financial institution that serves us at a relatively fair interest rate."

Moreover, focus group participants also focused on the availability of a financial institution that can serve them with minimum risk. For example, if they encounter a problem due to natural disaster, the financial institutions should be flexible enough to relax the repayment period.

For instance, a board member of Alemtsehay RUSACCO (male age 50) stated that

> *"microfinance institutions are "credit first" financial institutions. That means when we encounter certain risk, we can't pay easily our debt. In other words they will claim our assets like livestock. Moreover, they demand repayment on their rigid repayment date. So we need a financial institution that can promote first our saving culture and consider our problem."*

From the above mentioned reasons, one can judge rural saving and credit cooperatives are the better solutions to serve the society at a reasonable interest rate and flexible repayment period. There are three main reasons RUSACCOs suit in remote rural areas, where formal banks are not available. The first is that they have low operating costs due to their simple infrastructure. Secondly, they are managed by members whose salaries are very low compared with other financial institutions. Thirdly, the financial risks are relatively limited, partly because they mobilise their own resources (savings and member capital). Within small communities, relatively intimate client knowledge ensures that loans are primarily provided to borrowers who can be expected to repay them. Financial incentives for participants to monitor each other and the social relationships among them significantly mitigate the risks. Moreover, since they know each other they can manage problems in flexible ways.

7.2.2 Members' role during the establishment of RUSACCO

In the study areas, to promote a saving culture among the rural poor and to provide loans at a relatively fair interest rate, many parties, including beneficiaries, believe they should organise RUSACCOs.

According to the FGD participants, there was no coercive measure to join RUSACCO; it was based only on individuals' willingness. The initiatives of the establishment of RUSACCOs came from government and non-government institutions. None of the RUSSACOs were established through members' initiative in the study area. 60% and 40% of the RUSACCOs were organised by the *woreda* and NGO initiatives respectively. This indicates that the initiative of farmers to

form their own cooperatives is still minimal and most of the organising work for such RUSACCOs is still done by local governments.

The Dejen *woreda* cooperative facilitator (male age 28) stated that:

"we have an annual plan at woreda level to establish a certain number of new RUSACCOs by providing training to the local people about the benefit of a RUSACCO and the responsibility of membership. If the residents agree and fulfill the minimum number, we facilitate the establishment of a RUSACCO."

A board member of Addis Alem RUSACCO (male age 45) said that:

"Initially the woreda cooperative facilitators gave us training about the benefit of RUSACCOs. Then interested members established a RUSACCO with support from the cooperative specialist."

In Lay Gayint *woreda*, the idea of rural saving and credit cooperatives was generated from NGOs (like, Canadian Physicians for Aid and Relief (CPAR) and Organisation for Rehabilitation and Development in Amhara (ORDA). Initially they used to serve only poor women and NGOs provided seed money for women saving and credit association.

However, to get the legal back-up from the regional government or to register as a rural cooperative the principles of cooperatives should be fulfilled that means the principle of open membership (no discrimination by race, ethnicity, gender …) must be applied. Therefore, today these RUSACCOs serve both women and men rural poor residents equally and remain open for other residents to join.

When asked about the main reason the cooperative was established, the majority of the respondents gave the provision of credit and saving service to society as a reason. There are not enough financial institutions to satisfy the financial service demands of the rural poor. Some of the respondents believe that the RUSACCOs promote saving first then credit system which helps members to get a good guarantee for credit and to develop confidence. They are not obliged to sell their basic assets such as livestock and house in case of default. They were also happy with the RUSACCOs' flexible repayment schedules when members encountered a problem in repaying on time, and the payment of a dividend. Finally compared to informal financial

institutions, like *equib* (ROSCAs), RUSACCOs are a more permanent type of financial institution.

Being a member, it is natural to be satisfied or dissatisfied with the services received from the RUSACCO. While 97% of 134 respondents said they were very satisfied being a member of the cooperative societies, some expressed dissatisfaction because the cooperative societies remained weak for a long period. Still, in light of the benefits to be derived from the cooperatives, 82.9% of 127 the non-members do have a strong desire to join a RUSACCO.

7.3 Why do some of the Rural Poor Join RUSACCOs while others do not?

According to the Ethiopian Government cooperative proclamation Negarit gazzette No. 147/1998 part 3 section 13, any individual may become a member of a primary society where,

1. S/he has attained the age of 14;
2. S/ he is able to pay the share capital and registration fee required by the society;
3. S/he is willing to implement his obligation and observe the objectives and by-laws of the society;
4. S/he fulfills other requirements which may be specified in the regulations and directives issued for the implementation of this Proclamation;

Moreover, all members should be residing in the operational area of a RUSACCO or within the same *Kebele* administration. Each RUSACCO has by-laws that reflect the principles and norms of the International Cooperative Alliance. In principle, people join cooperatives based on informed decisions, which was not always the case under past regimes.

In this study, it was observed that the culture of mistrust and lack of confidence which prevailed in the cooperative form of business organisation of the past is still alive. For instance, in one of the selected RUSACCOs (Gojam Ber), board members said that the majority of the people consider RUSACCOs as government institutions and believed that after some time the government might take the resources collected from them. That is why in the Ethiopian administrative system, in one *Kebele* at least, one thousand households exist but, the number of members on average in each RUSACCO is around 175 households (less than 20% of the rural residents). This finding is very similar to the 17% participation rates found for cooperatives in the country (Bernard et al, 2007). This shows the lack of interest or ability of many rural poor to

join a RUSACCO. Moreover, in group discussions, it was observed that the majority of the rural poor thought that joining a RUSACCO signaled an acceptance of government policy. This showed their real feelings about RUSACCOs.

When asked, the rural poor cited different reasons for joining or not joining a RUSACCO. In the food insecured *woreda* (Lay Gayint), the history of the selected RUSACCOs informed us that initially the RUSACCO's main objective was to get support from the NGOs (CPAR). The majority of RUSACCO members said they joined because there were no other legal financial institutions that offer saving and credit services to the rural poor at a relatively low rate of interest and it was free from group lending risk. In group loans, the group members have joint liability. Joint liability makes each group member mutually liable for the entire group's repayment obligations. In other words, in group loan arrangements, each member of the group is held in default unless all loan repayments are met. In RUSACCOs, there is no problem of joint liability.

As one member of Edget Ber RUSACCO (female age 35) said:

> *"we don't have similar behavior. One person may feel responsibility for another's loan while the other person may be careless. So, why should we worry about others' repayments? We need an institution that is free from such complexity."*

Respondents also acknowledged the RUSACCO as their own institution managed by themselves, making decisions related to interest rates, repayment periods and other related issues. In food in-secured areas, the initiators (CPAR) provided seed money for immediate lending activities. Therefore, some joined the RUSACCO to get credit from the then women's saving and credit organisation.

On the other hand, non-members stressed the lack of information about the importance of the RUSACCO as the basic reason why they were not a member of a RUSACCO.

A farmer near Addis Alem RUSACCO (aged 54) said:

> *"no one tells us the benefits of RUSACCOs, that is why we didn't join it."*
> *"we are illiterate, we don't know anything about RUSACCO. Now we know more about its benefits, we will join it soon."*

From focus group discussions it was observed that respondents felt some sort of fear because they were expecting us government officials and might not told the truth. Because during our first round data collection non-members told us lack of awareness about the benefits of RUSACCO was the basic reason for not joining RUSACCO. However, after a year no non-member participant had joined a RUSACCO. It thus emerges that the basic reason for not joining RUSACCO was not lack of awareness but it might be related with the past negative history of the cooperative in terms of excessive government intervention and forced membership in the study areas. Thus, they lack confidence in the RUSACCOs.

In spite of this fact, some of the respondents gave other genuine reasons why they were not a member of a RUSACCO. For example, in one FGD, participants' reasons included the limited amount of credit available and how it could not solve their financial problems.

A business person around Addis Alem RUSACCO (male aged 43) said,

> *"the majority of RUSACCO members save very small amounts of money and the amount of credit is also very limited, so how can it change our livelihood? We prefer equib (ROSACO) because we can collect a good amount of money that can help us to promote our livelihood. Moreover, a RUSACCO can't provide us with other services like transferring money to other areas. That is why we didn't join RUSACCO."*

Another individual (aged 35, male farmer) near Alemtsehay RUSACCO focused on the seasonal nature of agricultural production and limited income source.

> *"my sole income source is crop production; I can get grain once a year so how can I save monthly? That was the basic reason why I am not the member of RUSACCO."*

Some of the respondents also focused on their access to saving and credit services from deposit taking microfinance institutions.

> *"We aren't involved in the saving and credit cooperatives because some of us are already customers of ACSI."*

However, the majority of FGDs concluded that inadequate training sessions coupled with the past negative history of cooperatives in the region are the main reasons for the low numbers of members.

7.4 Socioeconomic and Demographic Factors Affecting Membership in RUSACCOs

Socioeconomic research and theory tend to suggest that socioeconomic and demographic characteristics (e.g., age, sex, and education) may be important determinants of participation of poor people in RUSACCOs (Pomeroy & Carlos, 1997; Wright & Shindler, 2001). In addition to the group discussions and key informant interviews, it was necessary to identify the individual socio-economic and demographic characteristics that affect the decision of the rural poor to join the rural saving and credit cooperatives. This will help concerned parties to know on which factors to focus so that more people join and achieve household food security. This study identifies the determinant factors that motivate rural people to join RUSACCOs in the region. To meet this objective, relevant data were gathered from sample RUSACCO members and non-members using survey questionnaire and then analyzed using the probit model.

7.4.1 Econometric Model Specification

Different researchers use a variety of models to assess the participation of rural poor in different rural institutions and services based on their intended objectives. For instance, Karli et al (2006) used the binary logistic model, and Nugussie, (2010) and Sayadi et al, (2011) used the probit model to assess why some rural people join agriculture cooperatives while others do not. The participation decision of cooperative members can be explained with the use of a dichotomous model (Pindyck & Rubinfeld, 1981) represented by a dummy variable which is equal to "1" if membership occurs and "0" otherwise.

Since the endogenous variable is binary, i.e. member and non-member, to identify the most influential socioeconomic and demographic factors that determine whether or not a rural person became a member, the study employ a probit model. According to Wongnaa & Awunyo (2013), the probit model can constrain the outcome variable value to lie within 0 and 1, and has the ability to resolve the problem of hetroscedasticity. The probit model assumes that while we only observe the values of 0 and 1 for the variable Y, there is also a latent unobserved continuous

variable Y* that determines the value of Y. In addition, the probit model includes believable error term distribution as well as realistic probabilities (Nagler, 1994).

Previous research work on the socio economic and demographic factors that are expected to affect membership of the households was incorporated in the model. Demographic variables, household variables and variables which serve as a proxy for social interaction of individuals are included as explanatory variables in modeling the determinants of membership.

The analysis of membership in a RUSACCO will begin with the concept that the probability P that a poor i chooses to join a RUSACCO can be expressed as a function of a set of variables z that includes socio economic characteristics of the poor and aspects unique to his or her line of work.

The probit model adopted from Maddala (2005) and Nagler (1994) for this study is specified as follows:

$Pi = P(yi* < yi)$

$Pi = P(yi* < \beta 0 + \beta i x j i) = F(yi)$ (1)

$Pi = F(yi) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{zi} e^{\frac{s^2}{2}} ds$

Where Pi is the probability that a person will make a decision to join a RUSACCO or not; S is a random variable normally distributed with mean zero and unit variance; yi is the outcome variable (ability to join a RUSACCO or otherwise); yi* is the threshold value of the endogenous variable. To obtain an estimate of the index Zi, the inverse of the cumulative normal function is used:

$Yi = F{-1}(Pi) = \beta_0 + \beta_i x_i + u_i$ (2)

The parameters β_0, β_1, β_2, ……. β_k of the probit model do not provide direct information about the effect of the changes in the explanatory variable on the probability of a rural poor person being a member of a RUSACCO. The relative effect of each explanatory variable on the likelihood that a rural resident will be able to join RUSACCO (marginal effect) is given by

$$\frac{\partial Pi}{\partial xij} = \beta_{ij} \, f\,(Z_i) \qquad\qquad (3)$$

Where Pi the mean endogenous variable whose value is given in the probit results as:

$$f(Zi) = F\text{-}1(P_i) \qquad\qquad (4)$$

$$Zi = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots B_k X_k \qquad\qquad (5)$$

F(Zi) = density function of the standard normal variable and is given by:

$$f(Zi) = \frac{1}{\sqrt{2\pi}} \, e^{-1/2 z^2} \qquad\qquad (6)$$

The probit model was specified in this study to analyze the decision of the rural poor about whether or not to join a RUSACCO can be expressed as follows;

$$Yi = \beta_0 + \beta_1 \, x_1 + + \beta_2 \, x_2 + \beta_3 \, x_3 + \beta_4 \, x_4 + \beta_5 \, x_5 + \beta_6 \, x_6 + \beta_7 \, x_7 + \beta_8 \, x_8 + \beta_9 \, x_9 + \beta_{10} \, x_{10} + \beta_{11} \, x_{11} + \beta_{12} \, x_{12} + \beta_{13} \, x_{13} + u_i \, . \qquad\qquad (7)$$

The definition of variables is shown below (Table 7.1);

However, before the actual commencement of the data analysis, a multicolinearity diagnosis test was carried out to filter for variables that are dependent to each other. To this effect, the presence of high co-linearity was tested using Variance of Inflation Factor (VIF) (see annex 9). Accordingly, the results indicated no multicolinearity problem among continuous and categorical variables.

Table 7.1: Variable definition and hypotheses

	Variable	Description of variable	Expected sign	Remark
Y_i	Membership	Membership of RUSACCO ('0'= non members & '1' = Members.		
	Year	Data collection periods ('0'= 2011 & '1'=2012)		
x_1	Gender	Respondents Gender ('0'= Male & '1'= Female)	+	(Karli, Bilgic, & Celik, 2006; Oke et al, 2007)
x_2	Age	Respondents age in number of years	-	(Baticados, 2004; Idrisa, Sulumbe, & Mohammed, 2007; Karli, et al, 2006; Mahmud, 2008)
x_3	Occupation	Respondent's main job title ('1' = Agriculture & '0'= others)	-	(AGBONLAHOR et al, 2012; Othman et al, 2012)
x_4	Marital Status	Marital status of the respondent's ('1' = Married & '0'= others)	+	(AGBONLAHOR, et al, 2012)
x_5	Familsz	Family size of the respondent's	-/+	(Karli, et al, 2006; Nugussie, 2010; Kimuyu, 1999)
x_6	Educlvl	Educational level of the respondent's ('0'=illiterate, '1'=able to read and write	+	(Idrisa, et al, 2007; Karli, et al, 2006; Mahmud, 2008; Nugussie, 2010)
x_7	Farmexp	Farming experience in number of years	+	(Karli, et al, 2006)
x_8	Sizland	Size of land holding in hectare	+	(Karli, et al, 2006; Nugussie, 2010)
x_9	Distfromsac	Time taken to reach RUSACCO in minutes	-	(Puaha & Tilley, 2003)
x_{10}	Livestock	Number of livestock in TLU	+	(Nugussie, 2010; Mahmud, 2008)
x_{11}	Participation in ACSI	Respondents participation in deposit taking micro finance institutions ('1'=yes & '0'=no)	-	(Mahmud, 2008)
x_{12}	Partilcpld	Participation of respondents in local leadership ('1'=yes & '0'= no)	+	(Nugussie, 2010)
x_{13}	Participothr	Participation in other income generation activity ('1'=yes & '0'=no)	+	(Mahmud, 2008)

7.4.2. Demographic and Socioeconomic Characteristics of Respondents

This section describes the respondents' profile and presents summary statistics on the demographic and socio economic characteristics of the survey respondents.This involves a descriptive analysis of the various socioeconomic characteristics of respondents. Among the several features presented and discussed are: gender, age, marital status, household size, educational level, primary occupation and level of income.

Table 7.2 summarizes sampled households' socio-economic and demographic characteristics (continuous variables). Accordingly, the member and non-member groups were found to be significantly different with respect to family size, number of livestock, and distance from RUSACCO at 5%, 1% and 10% level of significance respectively. In contrast to non-participants, participants have a larger family size, a larger number of livestock and live closer to a RUSACCO office.

Table 7.2: Descriptive statistics for selected continuous variable

Variables	Members Mean	Non-members Mean	Total Mean
Age	41.16	42.89	42.01
Family size	5.27	4.94	5.11**
Farming Exp.	24.37	26.14	25.246
Size of land	0.977	0.908	0.943
Livestock	3.527	2.48	3.01***
Distance from RUSACCO	23.13	27.2	25.13*

Source: **Computed From Field Survey Data, 2011 and 2012** * = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

Table 7.3 shows descriptive statistics of categorical variables of sampled households. A detail description of each socio economic and demographic variable is provided below.

Table 7.3: Descriptive statistics of sample households (Dummy variables)

Variable	Category	Members		Non-members		Total	
		N	%	N	%	N	%
Gender	Male	152	58.69	185	73.12	337	65.82
	Female	107	41.31	68	26.88	175	34.18
Marital Status	Married	246	94.98	226	89.32	472	92.19
	Otherwise	13	5.02	27	10.68	40	7.81
Primary Occupation	Agriculture	223	86.10	223	88.14	446	87.11
	Otherwise	36	13.90	30	11.86	66	12.89
Educational level	Able to read and write	228	88.37	193	77.20	421	82.87
	Illiterate	30	11.63	57	22.80	87	17.13
Participation in other income generation means	Participant	130	50.19	88	34.78	218	42.58
	Otherwise	129	49.81	165	65.22	294	57.42
Participation in local leadership	Participant	119	45.95	53	21.20	172	33.79
	Otherwise	140	54.05	197	78.80	337	66.21
Participation in other financial institutions	Participant	44	16.99	54	21.60	98	19.25
	Otherwise	215	83.01	196	78.40	411	80.75

Source: **Computed From Field Survey Data, 2011 and 2012**

7.4.2.1 Gender

The numbers of women respondents are 41.31% and 26.88% of members and non-members groups respectively. This shows that the number of women in member groups is relatively larger than non-member groups (Table 7.3).

7.4.2.2 Age of respondents

The average age of the respondents is 42.01 years and the majority of the respondents are below 50 years. The average age of non-member respondents is 42.89 years, which is greater than the average age of members, 41.16 years (Table 7.2). See the respondents' age distribution in different age categories below (Figure 7.1).

Figure 7.1: Sample household head age distribution
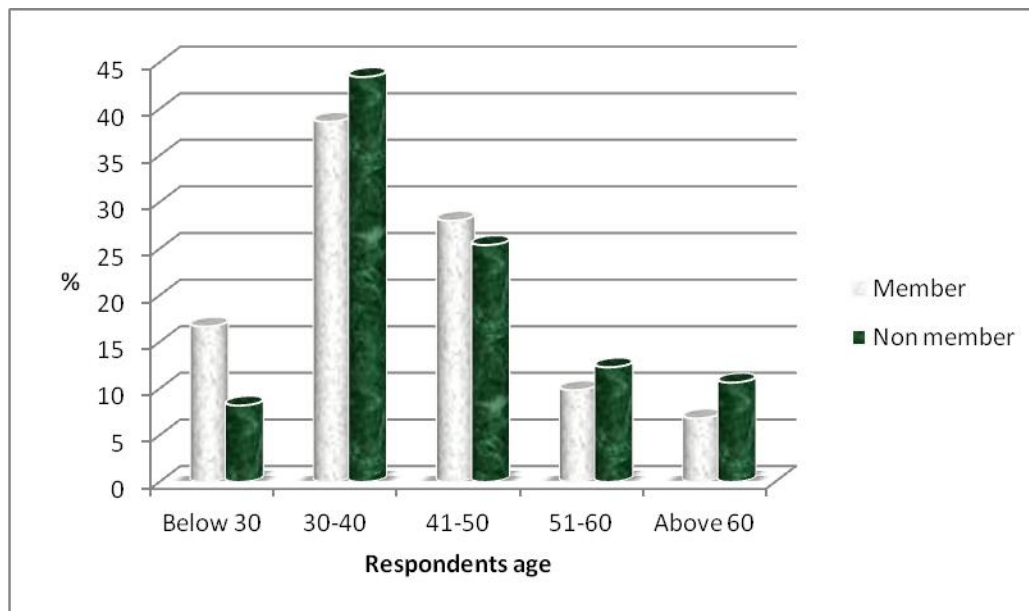
7.4.2.3 Marital status

The distribution of respondents by marital status indicates that the majority of the respondents (92.19%) are married. Moreover, the number of married member household heads (94.98%) is more than non-member household heads (89.32%) (Table 7.3).

7.4.2.4 Educational background of respondents

As revealed in Table 7.3, about 88.37% and 82.87% of members and non-members respectively are able to read and write. This shows members are relatively more literate than non-member household heads (Table 7.3). You can see below in Figure 7.2 the detail of the respondents' distribution in educational level.

Figure 7. 2: Sample household educational level
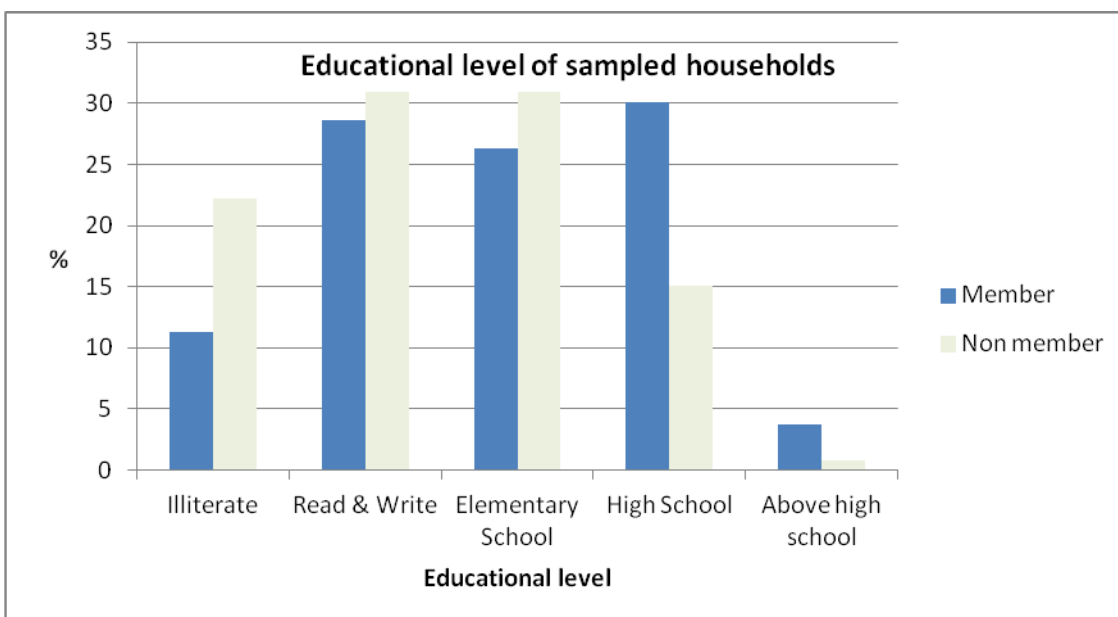
7.4.2.5 Household size of respondents

The average household size of respondents is 5.11 which is similar to the national average (5). The average household size of members and non-members is 5.27 and 4.94 respectively. This show the family sizes of members are relatively larger than non-members' family size (Table 7.2).

7.4.2.6 Primary occupation of respondents

In the study area households raise their livelihood in various activities (such as, agriculture, petty trade, handicraft, etc.). As shown in Table 7.3, the majority of the respondents are engaged in farming (87.17%).

7.4.2.7 Income level of respondents

Crops, livestock and their products and off-farm activities are the main sources of household income in the study areas. The distribution of sample households with different income categories indicates that 16.54% and 27.13% of members' and non-members' households respectively earned an annual income of less than 300 Euro. Figure 7.3 shows the annual income distribution of sample households during the 2010/11 production year.

Figure 7.3: Distribution of sample households' annual income in Euro
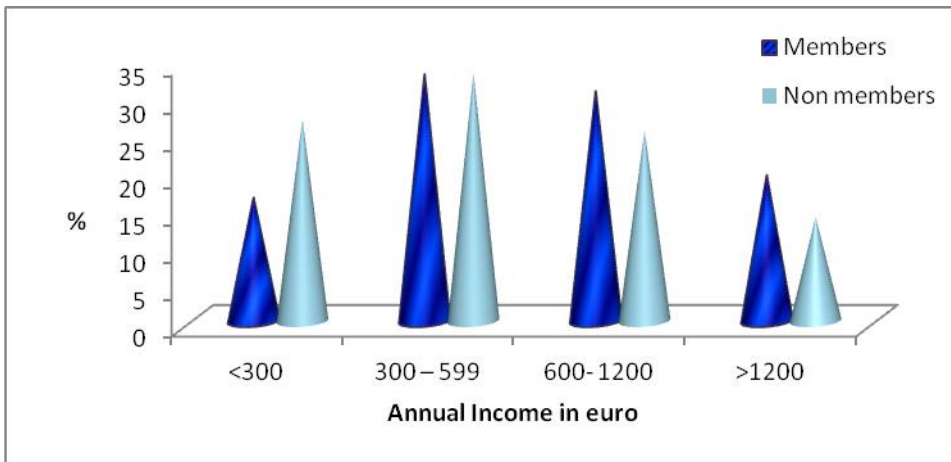
7.4.2.8 Distance walk from home to RUSACCO office

The proximity of the institution to the poor is one of the expected factors that affect the involvement of the poor in RUSACCOs. The average distance in minutes' walk from the respondents' homes to RUSACCOs in the study area was 25.13 minutes' walk (Table 7.3). The respondents' maximum distance from their home to the nearest RUSACCO in minutes' walk was 150 minutes and minimum only one minute walk (Figure 7.4).

Figure 7.4: Distance walk
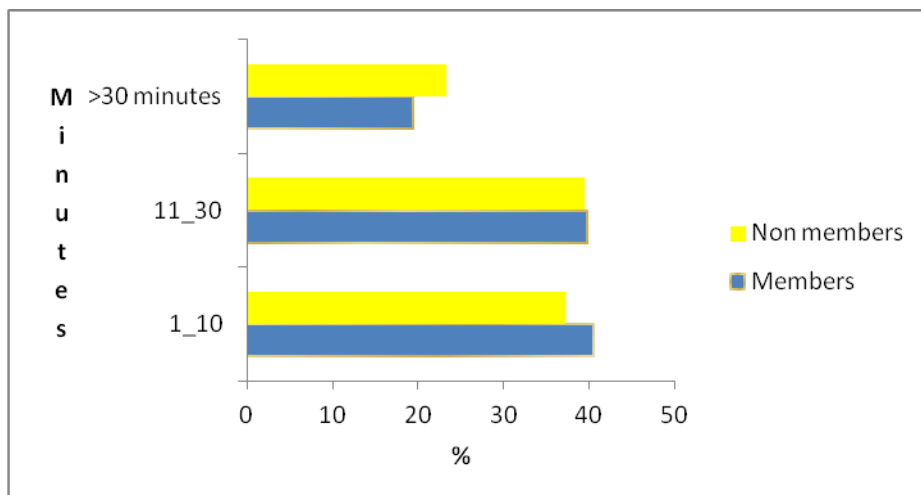
7.4.2.9 Date of membership

The length of membership in a RUSACCO was expected to affect the participation by members in different RUSACCO activities. Mean length of membership in RUSACCOs in the study areas was 7.49 years. The majority of the respondents were members for more than 6 years (see Fig 7.5 below).

Figure 7.5: Length of membership
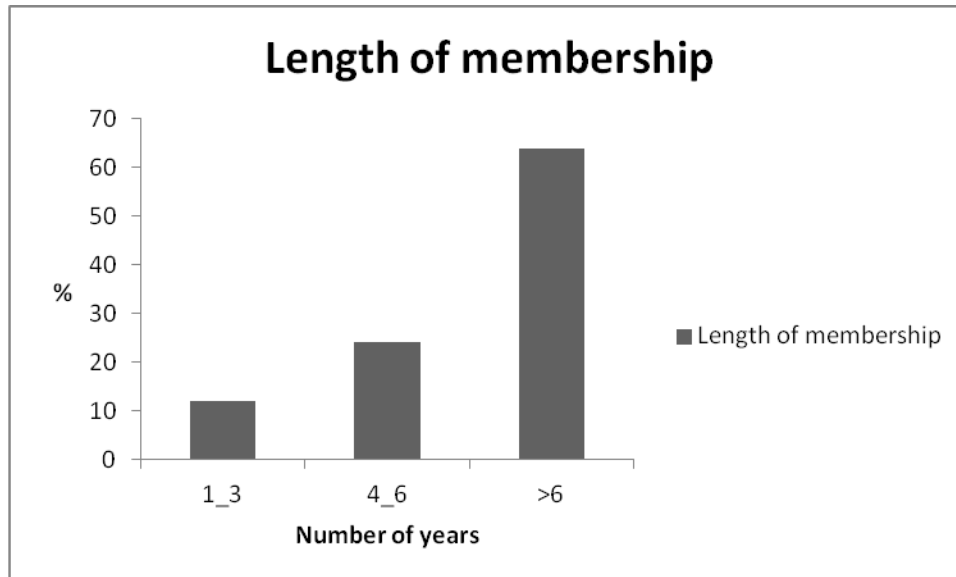
7.4.2.10 Size of land

Land in rural Ethiopia is a very important means of production. It plays a central role in producing crops and rearing livestock. Moreover, access to land confers a right to access to agricultural extension services and new agricultural technologies.

Land is the primary resource (input) in the production process. The average total farm size in the study area was 0.98 ha for members of RUSACCOs and 0.91 ha for non-members (Table 7.2). Figure 7.6 shows the respondents' size of land distribution.

Figure 7.6: Distribution of respondents' size of land
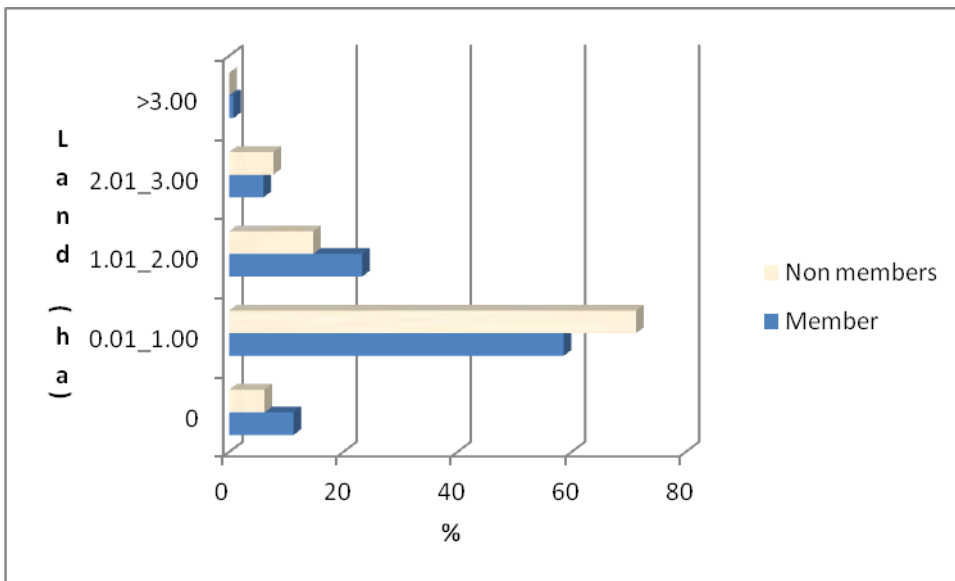
7.4.2.11 Size of livestock

In rural Ethiopia, the basic household asset is livestock. In the study area, most of the farmers practice mixed farming. The average livestock numbers measured by tropical livestock units (TLU) were 3.53 and 2.45 for members and non-members respectively (Table 7.2). Figure 7.7 shows the distribution of respondents' livestock size in TLU.

Figure 7.7: Distribution of respondents' livestock size in TLU
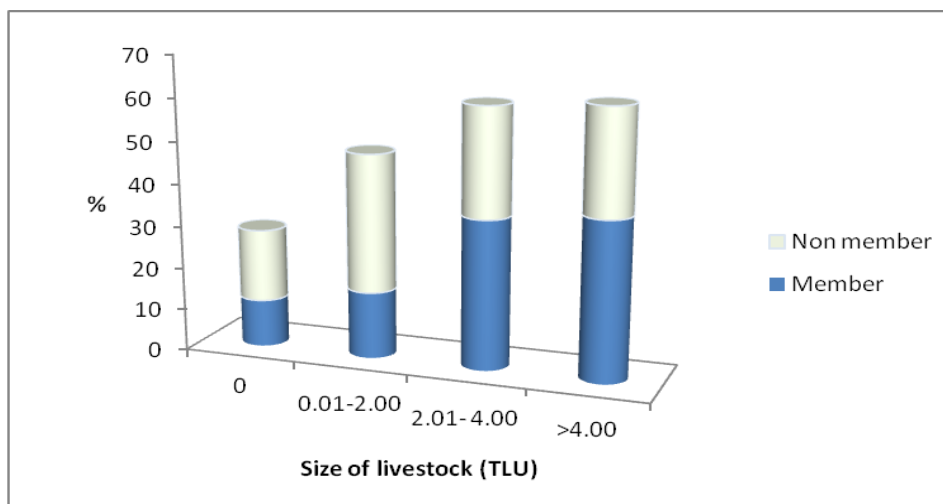
7.4.2.12 Farm experience

The length of experience of farmers in number of years was also another expected factor that can affect the level of participation of farmers in RUSACCOs. The average farm experience of the members (24.37 years) was relatively shorter than non-members (26.14 years) (Table 7.2). Figure 7.8 shows the respondents' farm experience distribution.

Figure 7.8: Respondents' farm experience in number of years
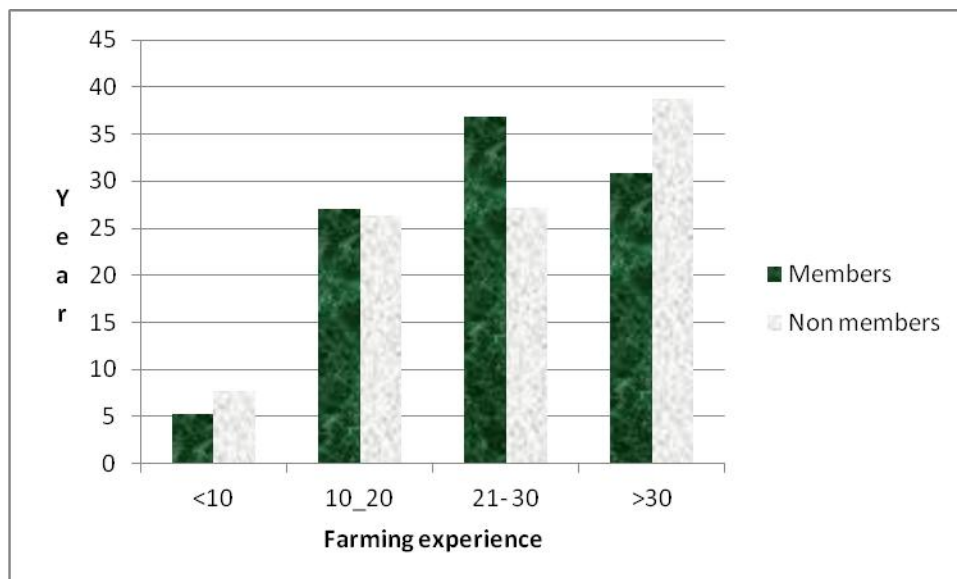
7.4.2.13 Participation in additional income generation activities

Rural households cope with transitory food insecurity by diversifying their sources of income. Participation in other income generation activity in addition to their primary occupation was expected to positively affect the participation of rural poor in RUSACCOs. In the study area, 50.19% of members and 34.78% of non-members participated in additional income generation activities. This shows member participation in additional income generation activities is greater than non-member participation (refer to table 7.3).

7.4.2.14 Participation in local leadership

Previous research works has shown that local leaders are always vocal, intelligent, cosmopolitan, knowledgeable, and sometimes educated. Their participation in rural institutions was also expected to be better than ordinary people. In the study area, 45.95% and 21.20% of members and non-members respectively were participating in local leadership (see table 7.3).

7.4.2.15 Participation in other financial institutions

In the Amhara national regional state there are microfinance institutions that provide financial service for part of the rural society. If rural poor participate in these deposit taking micro finance institutions, their involvement in RUSACCOs will be very low. In the study area, 16.99% and 21.60% of members and non-members respectively were participating in other financial institutions (see table 7.3).

7.4.3 Estimation Results and Discussion

The probit model illustrates how socio economic and demographic factors induce rural poor to join or not to join RUSACCO. Table 7.1 presents the list of the independent variables included in the models and estimation results. It estimates the parameter coefficient (βi) and predicts marginal values of determinants on membership. Each RUSACCO member has, and the members collectively have, a unique socio-demographic profile. Although this profile reflects the structure of the communities from which the membership is drawn, it can vary significantly from the general makeup of the population when subgroups are over or underrepresented. A RUSACCO membership can be characterized in terms of gender, age, occupations, family size, or other socioeconomic indicators. The members collectively can be characterized in terms of their homogeneity. In other words, based on those demographic and socioeconomic conditions one can differentiate RUSACCO members from non-members.

Table 7.4: Binary Probit Results on Determinants of Household Membership in RUSACCO

Membership	Lay Gayint			Dejen			Total		
	Coef	z	dx/dy	Coef	z	dx/dy	Coef	z	dx/dy
Year	.075	0.42	.030	-.732	-0.39	-.028	0.023	0.18	0.009
Gender	.572	2.76***	.223	.990	4.39***	.370	0.692	4.97***	0.267
Age	.056	2.67***	.022	-.014	-1.11	-.005	-0.004	-0.39	-0.001
Occupation	-.546	-1.43	-.205	-.759	-2.66***	-.285	-0.627	-2.97***	-0.237
Maritalstatus	.069	0.20	.027	.869	2.28**	.318	0.404	1.73*	0.159
Familsz	-.041	-0.57	-.016	-.031	-0.53	-.012	-0.024	-0.58	-0.010
Educlvl	.683	2.60***	.266	-.124	-0.36	-.049	0.468	2.43**	0.184
Farmexp	-.055	-2.66***	-.022	.014	1.24	.006	0.004	0.45	0.002
Sizland	-.323	-0.95	-.129	.102	0.65	.041	-0.119	-0.99	-0.047
Livestock	.261	4.25***	.104	.126	2.64***	.050	0.120	4.64***	0.063
Distfromsac	-.004	-1.19	-.002	-.012	-1.93*	-.005	-0.003	-1.30	-0.001
Particinother FI	-.124	-0.52	-.049	-.162	-0.73	-.065	-0.226	-1.46	-0.090
Particplcld	.319	1.49	.126	1.078	5.52***	.405	0.701	5.10***	0.271
Participothrincm	.425	2.10**	.168	.457	1.99**	.179	0.488	3.53***	0.192
Constsant	-1.484	-2.33**		-.732	-1.07		-0.929	-2.12**	
Pseudo R2		**.2029**			**.2262**			**.1635**	

Source: **Computed From Field Survey Data, 2011 and 2012**

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1% Number of Obs =500, Wald chi2 (13) = 105.80

The signs of marginal effect variables are in line with the signs obtained from parameter estimates, however, larger t-values attributed to the significant variables. From this one can drive only intentions on the significant variables. The value in the coefficient column shows the direction, that is, whether the explanatory variable positively or negatively affects the model.

7.4.3.1. Total Sample Households

The result discloses gender, marital status, educational level, size of livestock, participation in local leadership and participation in other income generation activity which positively influence the probability of the rural poor to join a RUSACCO. However, the primary occupation of the participants is negatively related with rural poor RUSACCO membership. The results are consistent with the expectations. For example, women participation in microfinance institution is better than men.

The remaining variables, i.e. age, family size, farm experience, size of land, and participation in other financial institution, are classified as weak because they do have statistically insignificant impact to enlarge the probability of rural people to become members of a RUSACCO. From the marginal value of the explanatory variables, one can interpret a significant probability of the variables.

Gender

In this research work, the number of women who joined RUSACCOs was significant. According to the findings, the probability of female headed households to become members of a RUSACCO was 26.70% higher than male headed households. The reasons may be the history of the selected RUSACCO and the unique behavior of a RUSACCO.

From five selected RUSACCOs, two initially served only poor women as women self-help saving and credit organisation. That means initially they were not accessible for men and this may be one reason for the significant number of women from the general women headed households in the study area. Moreover, the RUSACCOs provide micro saving and credit services in which the demand and the performance of women were relatively good. For instance, Helmore (2009) found that local moneylenders generally prefer to lend to men rather than to women because women are less likely to own assets that can be used as collateral. In addition,

women have other needs that moneylenders do not meet. These are the need to invest in income-generating activities, a desire to save so that they can use their savings in times of scarcity, and the solidarity and mutual support that come from belonging to a group of their peers.

Occupation

In rural Ethiopia, the majority of the populations raise their income from farming activities. However, that does not mean that farming is the only occupation of rural households. Rural households engage in a variety of income generation activities. For instance, in this study, around 12% of the rural poor engaged in non-farm activities. Farming in the Ethiopian context is seasonal. Farmers, at most, produce crops up to four times a year. They cannot get continuous income throughout the year unless they sell their product at different times. However, residents who engaged in non-farm activities as civil servants, in handicrafts or as daily laborers raise year round continuous income.

Initially it was assumed that those households who engage in non-farm activities are more likely to join RUSACCO than full-time farmers. The reason is that in non-farming transactions are usually year round and therefore, they need a financial institution that supports their day to day activities of non-farming activities. Moreover, agricultural input credit was covered by multipurpose cooperatives three years earlier. The result of the study was also in line with the initial assumption of the study. According to the findings, the probability of households who engage in non-farm occupation to join a RUSACCO was 23.70% higher than households whose only income source was farming (see table 7.4).

Marital status

In rural Ethiopia, society gives credibility to marriage. Those married households are active participants in social affairs because they feel more responsibility than single households. Initially it was hypothesized that the probability of married households' probability of joining RUSACCOs is relatively higher than for single-head households. The result of the study also confirmed that the probability of married households for joining RUSACCOs was 15.90% more than that of other respondents (see table 7.4).

Educational level

The respondents' educational level was one of the expected factors for the decision of rural poor to join RUSACCOs. Educated people tend to understand the new intervention more quickly than illiterate people. The assumption of the study was that if the level of respondents' educational level increases, the probability of joining a RUSACCO will also increase. The finding of the study revealed that the probability of educated household heads joining a RUSACCO was18.40% more than that of illiterate household heads (see table 7.4).

Livestock size

The level of household assets was expected to be a determinant for joining a RUSACCO. In rural Ethiopia, the basic measure of household asset is the size of the livestock herd. In this study, it was hypothesized that the higher the size of livestock the higher the probability of joining RUSACCO. The result of the study also revealed that if household assets increase, the probability of being a member of the RUSACCO will also increase. Livestock, compared with farming, can provide relatively continuous income for households. The findings of the study also revealed that a TLU increase in livestock will increase the probability of joining a RUSACCO by 6.30%. Sale of livestock and livestock products like egg, milk, butter, etc can enable households to save regularly in a RUSACCO (see table 7.4).

Participation in local leadership

Local leaders are relatively active in understanding the benefits of any intervention in rural Ethiopia. In this study it was assumed that the probability of local leaders being a member of the RUSACCO will be higher than others. The study showed that the probability of local leaders being a member of a RUSACCO was 27.10% higher than other rural residents (see table 7.4).

Participation in other income generation activities

The aim of income generation activities is to generate supplementary income. These activities in rural settings often have several objectives such as improving food security, income generation and empowerment at the same time. Therefore, such activities require financial services from financial institutions. In this study it was assumed that the probability of joining a RUSACCO of

those households who involve in additional income generation activities are higher than for those who do not.

The study revealed that the probability of those households involved in additional income generation activities of being a member of RUSACCO was 19.20% higher than those who did not involved in additional income generation activities.

7.4.3.2. Determinants of membership in food secured and in-secured Wordas

Looking at the determinants in both food-secured and insecure sampled *Woredas*, gender, number of livestock and participation in other income generation activities have influence rural poor to join or not to join RUSACCOs. However, the intensity of each factor's influence on RUSACCO membership in these two *Woredas* is different. According to the findings, the probability of female headed households to become members of a RUSACCO in Lay Gayint *Woreda* was 22.3% higher than male headed households. Whereas, in Dejen the probability of female headed households to become members of a RUSACCO was 37% higher than male headed households.

The findings of the study indicated that a TLU increase in livestock in Lay Gayint *Woreda* will increase the probability of joining a RUSACCO by 10.40%. Whereas, a TLU increase in livestock in Dejen *Woreda* will increase the probability of joining a RUSACCO by 5%. The study also revealed that the probability of those households involved in additional income generation activities in *Lay Gayint* of being a member of RUSACCO was 16.80% higher than those who were not involved in additional income generation activities. The probability of those households involved in additional income generation activities in *Dejen Woreda* of being a member of RUSACCO was 17.90% higher than those who were not involved in additional income generation activities.

Some socio-economic and demographic factors influence only one of the sampled *Woredas*. Household age, educational level and farming experience influence membership in food insecure Lay Gayint *Woreda*. According to the finding of the study, a one year increase in the age of household head will increase the probability of joining a RUSACCO by 2.2%. The probability of educated household heads joining a RUSACCO was 26.60% more than that of illiterate

household heads. A one year household head farming experience will decrease the probability of joining a RUSACCO by 2.2% in Lay Gayint *Woreda*.

On the contrary, in food secured Dejen *Woreda* household head occupation, marital status, distance from RUSACCO and participation in local leadership influence rural poor RUSACCO membership. According to the findings, the probability of households who engage in non-farm occupation to join a RUSACCO was 28.5% higher than households whose main income source was farming. The probability of married households joining RUSACCOs was 31.80% more than that of other respondents. An increase in the distance to a RUSACCO by one minute will decrease the probability of joining a RUSACCO by 0.5%. The study also shows that the probability of local leaders being a member of a RUSACCO was 40.50% higher than other rural residents (see table 7.4).

7.5 Summary and Conclusion

The government of Ethiopia and other development partners believe cooperatives can help the rural poor to tackle the problem of food insecurity and improve their livelihood. Nevertheless, only a very small number of rural households opted to join a RUSACCO. This chapter examined why RUSACCOs started, the attitudes of the rural poor to RUSACCOs and socioeconomic determinants that motivate the rural poor to join or not. Individuals who qualify for membership are free to join cooperatives. In the study areas, the main reasons why RUSACCOs start are; to get saving and credit services at fair interest rates and to liberate themselves from group lending risk. Moreover some members acknowledged that RUSACCOs are their own institutions.

However, some non-members saw RUSACCOs differently due to the past negative history of cooperatives in Ethiopia. They consider RUSACCOs as government institutions and lack confidence in them. Moreover, lack of information about the benefits and principles, and a very small amount of saving and credit are among the main problems that discouraged non-members to join a RUSACCO.

Finally, in the study areas the major socioeconomic and demographic factors that motivate some to join and others not to join are; gender, household head occupation, marital status, educational level, livestock size, participation in local leadership, and participation in other income generation activities.

According to the findings of this study, one can conclude that the attitude of the majority of the rural poor towards RUSACCOs is positive. Members of RUSACCO believe RUSACCOs can mitigate their financial needs in the study areas. Female-headed households' were more likely to join a RUSACCO than male-headed households. As expected, households primarily engaged in non-farm activities were more likely to join a RUSACCO than those to whom farming is the main occupation. The study also finds a positive association between being married and joining a RUSACCO. Literate rural household heads probability of joining RUSACCO is more than illiterate rural household heads. The larger the size of livestock asset of a household measured in terms of TLU, the more likely for the household to be the member of RUSACCO. Additionally, it was found that local leaders were more probable to be members of a RUSACCO than other residents. Finally, households who involve in more than one additional income generation activity (i.e. in addition to their main occupation) registered higher probabilities of joining a RUSACCO than those who depend on single activity.

CHAPTER EIGHT

RURAL SAVING AND CREDIT COOPERATIVE MEMBERS' PARTICIPATION

8.1 Introduction

In the previous chapter the reasons for the establishment of RUSACCOs were discussed and also why the rural poor joined or did not join RUSACCOs. In this chapter, the involvement of members in both management decisions and economic issues in their RUSACCO would be discussed. As owners of the RUSACCO, members contribute financial and other inputs for launching their RUSACCO activities. Members provide share capital, involve in different economic activities, elect a board of directors and receive the benefits of ownership through patronage refunds based on the extent of their transactions with the RUSACCO.

Participation of the rural poor in development activities has long been recognized as a vital instrument in genuine rural development. The cooperative exists as a result of its members' active participation. Members join the cooperative for mutual benefit, which can result only when each member feels sense of ownership. Members are owners of their RUSACCO so they have the right to participate in policy formulation and decision making. As a cooperative member, they should also use all cooperative services. RUSACCOs provide members with saving and credit services, and also training services for effective utilization of borrowed funds. RUSACCOs should support cooperative education, for example, in the wise use of financial resources. Attitudes of members towards their RUSACCOs have a significant impact on their cooperative participation behaviour.

8.2 Members' Participation in Decision Making

One unique feature that separates cooperatives from other forms of business entity is their member involvement and participation in the organisation's activities (Dakurah et al, 2005). Members own their business so they have a stake in it and collectively made policies and decisions. Men and women serving as elected representatives are accountable to the membership. Members have equal voting rights (one person, one vote).

RUSACCOs are based on their members' equal participation in cooperative governance, as shown in the "one person, one vote" principle of cooperatives. This principle implies the fact that all decision-making and control systems are based on members' involvement in the organisation. Members are, at the same time, shareholders and clients of the cooperative in which they may be elected to the positions on the management committee or other subsidiary committees, without receiving any compensation. Since members control their cooperative, there must be a system for members to exercise their control. The annual meeting is a part of this arrangement. It enables members to set policies and guidelines for the management committee, to elect the management committee and to evaluate the year's operations.

There are vital areas for members' participation in the decision making processes; these are the involvement of RUSACCO members in the general assembly, management committee or the board of director, specialised committees such as the control committee, credit, education and information committees and cooperative employees. While the general assembly, which is the meeting of all members of RUSACCO, frames the general policies, approves the annual plan, budget and audit report. In the study area the general assembly held meetings once in a year.

The management committee convert the RUSACCO policies into action plans and implements planned activities by using employees of the RUSACCO. Practically, in the study areas, RUSACCOs are managed by the management committees supported by local government staff. The management committee consists of seven members. The chairperson, secretary, vice chairperson, treasurer and three additional elected members are members of the management committee. The management committees were elected through the general assembly and are expected to serve for a period of two to three years based on each RUSACCO guideline.

From group discussion and key informant interviews, it was understood that the majority of the members attend the general meeting unless a problem beyond their control occurred. However, women in most of the RUSACCO meeting did not get involved actively like men. They do not make suggestions for the overall development of the society in the way men do. The reasons may be the traditional role of women in the society and the prevalent misconceptions around women's reproductive and domestic responsibilities and their low level of education. In the FGDs, I understand that women by themselves were not active and not willing to share their ideas to the participant.

A member of Alemtsehay RUSACCO, (age 41, female) said,

> *"we believed our RUSACCO's men members usually raised good ideas for the community development. That is why we didn't say anything more."*

It was understood that members were willing to participate in management and other committee membership. From the survey report, 98.4% of the respondents were happy to assume responsibility in RUSACCO. Only 1.6% of the respondents' lacked a willingness to accept the responsibility. Their main reason was related with their educational level.

For instance, a member of Tesfa RUSACCO, (male, age 45) replied that,

> *"I am illiterate. I can't read and write. Management of the cooperative at least demands a minimum of reading and writing capacity. That is why I am not willing to take management responsibility."*

A member of Edget Ber RUSACCO, (female, age 61) said that,

> *"my RUSACCO improves my life. But I am not fully satisfied as a founder of RUSACCO, because I can't get involved in the management committee since I am illiterate."*

The result of the study is in line with the study of Arayesh & Mammi (2010) in Iran. According to their study, there is a positive and significant relationship between the participation of members in decision making and their level of education.

The regional cooperative promotion agency convinced RUSACCOs to incorporate at least one woman in each established RUSACCO committee. However, due to cultural influence, the level of education and heavy domestic activities, the numbers of women committee members are still very small. The total number of committee members in each RUSACCO is sixteen. The participation of women in management committee in selected RUSACCOs is only 11.25% of the total management committee positions. In addition it was reported that they cannot attend committee meeting regularly compared with men.

Figure 8. 1: Organisational Structure of Primary Level Savings and Credit Cooperatives

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┌─────────────────────────────────────┐
│  General Assembly/General Meeting    │
└──────────────────┬──────────────────┘
                   │
                   │          ┌──────────────────┐
                   ├──────────│   Controlling    │
                   │          │   Committee      │
                   │          └──────────────────┘
                   │
        ┌──────────┴──────────┐
        │     Management      │
        │     Committee       │              ┌──────────────────────────────┐
        └──────────┬──────────┘              │ Other subsidiary committees   │
                   │                         │                               │
                   │                         │   • Credit Committee          │
                   ├─────────────────────────│   • Education, Training and   │
                   │                         │     Information Committee      │
                   │                         │   • others                    │
                   │                         └──────────────────────────────┘
        ┌──────────┴──────────┐
        │      Manager        │
        └──────────┬──────────┘
                   │
     ┌─────────────┼─────────────┐
     │             │             │
┌─────────┐  ┌─────────┐  ┌─────────────┐
│Accountant│  │ Cashier │  │ Other staffs│
└─────────┘  └─────────┘  └─────────────┘
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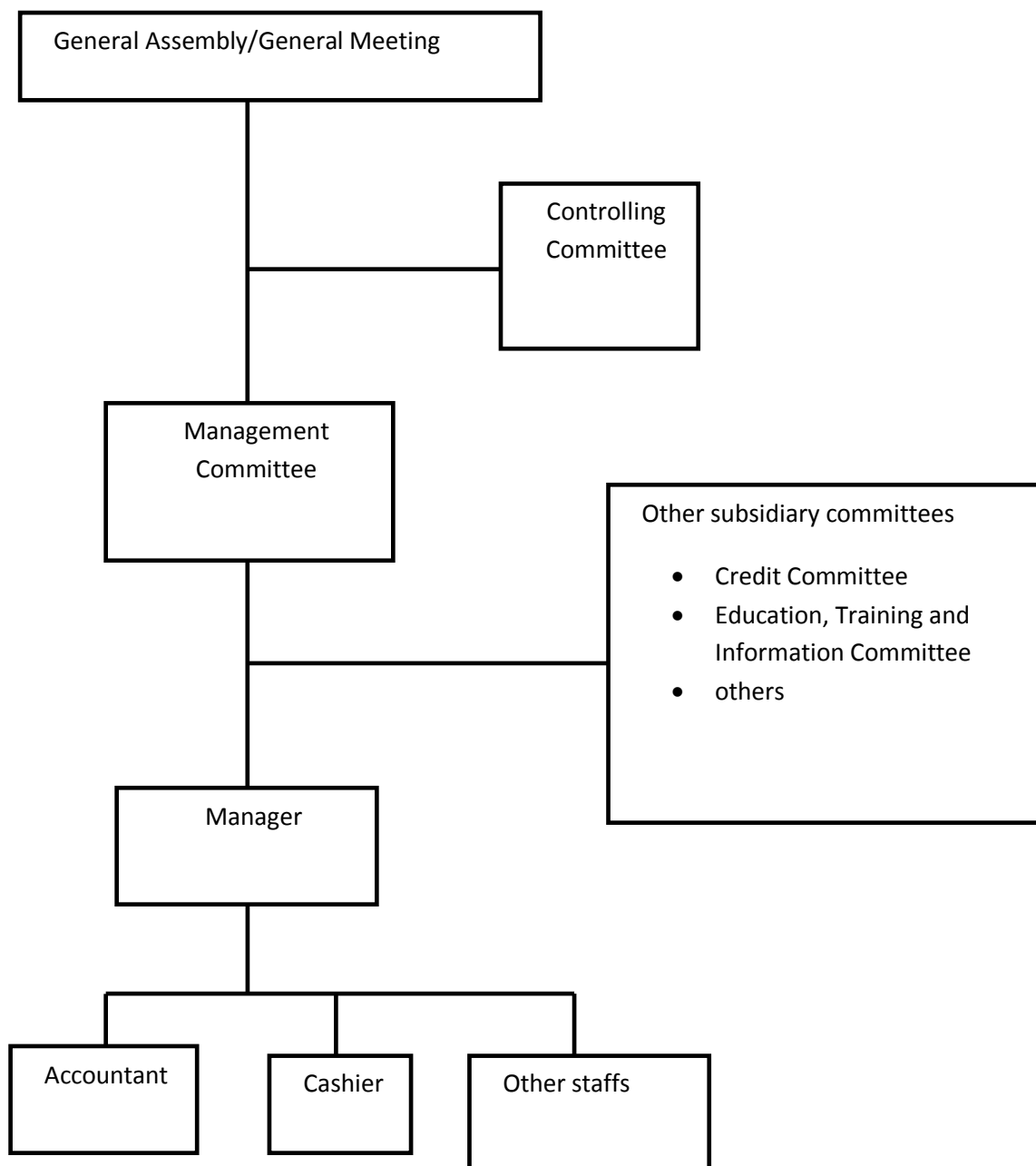
The General assembly: is the top organ of the RUSACCO with overall authority regarding the governance of the organisation. During the general assembly the members exercise their right and duty to vote on and participate in decisions concerning the affairs of their RUSACCO and also elect individuals to the board of directors/ management committee as provided by the bylaws. Although the general assembly meeting delegates to the board the responsibility of managing the affairs of the RUSACCO, certain decisions are a preserve of the general meetings. The general meeting is the supreme organ that governs the existence and operations of RUSACCO and is held once every year.

Controlling Committee: This committee is equally elected by the members at the general assembly meeting and consists of three members. The responsibility of this committee is to conduct member account verification, and periodic internal audits of the operational areas throughout the year. It monitors the activities of all other committees including the management committee to ensure that resolutions and policies are implemented and regulatory requirements are complied with.

Management Committee: are elected by the RUSACCOS members usually during general assembly meeting for the purpose of managing the affairs of the RUSACCO. They are accountable to the general membership and report biannually to members on its management of the RUSACCO. The Board consists of seven committee members. They are responsible for setting policy and govern activities of a RUSACCO in accordance with by-laws and legislation. The management committee may appoint other committees as necessary to effectively conduct the business of the RUSACCO. Such committees may include Credit Committee, Education, Training and Information Committee, and others directly elected committee members as the case may be.

Education, Training and Information committee: is also elected at the general assembly to oversee the education, awareness creation and training operations of the RUSACCO. It is responsible for informing the members and non-members of the RUSACCO's services and promotes the ideas of RUSACCO. Its activities are monitored by the controlling committee although it does not report to it.

Credit Committee: is elected by the general membership during the general assembly. A credit committee consisting of three persons for such terms as the by-laws provide. This committee is responsible for considering and approving or disapproving loan applications and follow up on repayment of loans. In short the committee is responsible for the general supervision of the loans to members. Its activities are also monitored by the controlling committee although it does not report to it (see figure 8.1).

8.3 Members' Training

The cooperative movement in all its facets is dependent on education and training of its members. According to Zeuli et al (2004), members' education can encourage them to become more involved and committed to the cooperatives. Education and training are correlated and interdependent. Therefore, without one, the other cannot be possible. The organisation and functioning of a cooperative society is a task that requires a certain amount of unique technical knowledge. The fact that a cooperative is an economic as well as a social institution, this makes management more complex.

Education of cooperative members is essential to effective communications both internal and external to the cooperative (Williamson, 1998, p.1). Members need to know about the unique features of cooperatives in general and how those features affect their RUSACCO's day-to-day operations. When they know more about cooperatives, educated members find themselves in a better position to communicate with others about their cooperative. Communities with strong individual capacity have the ability to articulate their needs, resources, and access external resources to meet their needs (Weil, 2004). They are also more likely to become actively involved in it and can contribute positively to its success.

Cooperative education and information is a continual process. Just as cooperative membership continually changes, so do the education and training needs of management committee and employees. The various publics with which cooperatives need to communicate also continually change. The need for continuous education stems from several factors including changing membership as young farmers join; changes in member attitudes and loyalty to the RUSACCO; cooperative growth and expansion requiring members to adjust to a more complex business organisation; and sociological and economic changes.

If a RUSACCO is to be a sustainable financial institution in rural Ethiopia, the members should be fully aware of the principles and practices of cooperatives. Cooperatives should promote cooperative education for the members. In less developed countries, lack of capacity building has been an important element contributing to limited rural cooperatives development (Aref, 2011). Moreover, awareness and knowledge about RUSACCO enterprise, as an option to conduct business is vital for those who want to benefit from it (Sanyang & Huang, 2008). That means for cooperative viability, members' knowledge about the cooperative principles and advantages has paramount importance. The success of saving and credit cooperatives requires training of members as well as management. Members have, therefore, to be brought closer to their cooperatives by a process of regular and intensive member education activity so that they participate in the management and business activities without being ignored.

In this regard, government and non-government organisation have played a vital role in the study area. The regional cooperative promotion agency (CPA) was the major actor. CPA has office and experts at grass root level. These experts have provided technical advice to RUSACCO to perform day to day activities. Moreover, the regional government CPA has provided formal training for RUSACCO management committees and accountants with the expectation that management committees will disseminate their knowledge to other members of the RUSACCO to run their RUSACCO effectively and efficiently. In the study area, all cooperative management committees received training from a government CPA.

Furthermore, according to respondents view such training can help to maintain or increase the number of members, member loyalty and commitment. From group discussion, non-members responded that they lacked information about the benefits of RUSACCO. Based on this reason one can generalize that proper training can promote membership. A negative image of cooperatives can be addressed only through proper training and showing the practical benefits of cooperatives.

Moreover, many rural poor acknowledged that cooperative training can widen their overall know how.

A board member of Edget Ber RUSACCO, (age 32, female) stated that,

"we need training more than other things because it can help us to use our limited resources effectively and efficiently. Moreover, it will promote overall awareness of our society."

One participant further explained the contribution of the previous cooperatives impact on rural poor in this regard:

A farmer near Gojam Ber RUSACCO (age 62, male) said that,

"the only benefit of the past Derg regime cooperative was it widened our knowledge. Through cooperatives we have got good knowledge about the benefit of diversifying our income sources, benefit of teaching our children, changing saving behavior and home management. It was our big school even though we were forced to do many things that we didn't like. Today we expect more benefits from RUSACCO."

Moreover, the regional cooperative promotion experts also acknowledged the benefit of training and the presence of rural cooperatives in the overall development of the rural economy;

A cooperative specialist (age 40, male) stated that,

"in rural Ethiopia there are very limited schools for adult farmers. Majority of the population are illiterate. Cooperatives can teach rural poor how to democratically solve their problems and through cooperative strong local leadership can emerge. The benefit of training and education to rural Ethiopia is more than assuring efficient and sustainable management of cooperative."

The above mentioned reasons are enough to intervene in cooperative training for government as well as non-governmental institutions. CPAs annually plan and undertake training for cooperative management and employees. In the study area, NGOs such as the Canadian Physicians for Aid and Relief (CPAR) and Organisation for Rehabilitation and Development in Amhara (ORDA) have also played key role in increasing the awareness of the rural poor awareness about the benefits of saving and credit cooperatives in tackling the problem of food insecurity in particular and promoting rural development in general. In addition, IFAD has provided funds to cover the training costs of regional CPAs.

However, the training demand remains still unsatisfied. The majority of FGD participants' believe that the number of members in RUSACCOs is limited because of a low level of training and awareness creation. Members wanted to attend training and education forums to build their level of awareness.

8.4 Members' Participation in Dividend

Patronage dividends are allocated to RUSACCO members based on a proportion of profit made by the business with RUSACO. Members should receive a patronage dividend in proportion to the business they do with the cooperative only if it makes a surplus. It is the reward for members' participation in their cooperatives. A dividend has a unique advantage in the Ethiopian cooperative movement. First members can appreciate the RUSACCO as their own organisation and value the benefits of the cooperative compared with other forms of business organisations. This in turn helps to eliminate the past negative image of cooperatives and to develop members' sense of ownership. Moreover, the payment of patronage dividends to members is a major factor in attracting new members and increasing the willingness of old members to save and borrow through the cooperative.

In addition, the consistent payment of patronage dividends gives members an objective way of assessing the financial health and performance of cooperatives. A Patronage Dividend system is a financially responsible method of returning surplus to member-owners. It provides member-owners a fair and equitable benefit, based on the cooperatives financial health and each member-owner's contribution via their patronage. The benefit member-owners receive is directly linked to the health and profitability of the business.

RUSACCOs are members benefit maximiser business organisation. In the study areas, 94.74% of RUSACCO members were receiving dividends. The amount of dividend was limited because members' investment was very limited. On average, in one fiscal year, members' patronage dividend was 37.69 Birr (€1.64). Moreover, the maximum amount of patronage dividend was 388 Birr and the minimum amount was 1.45 Birr. The basis for patronage dividend was only members' number of shares in the cooperative. However, during the time of the survey, there was a tendency to amend their bylaws.

8.5 Member Participation in Saving

Saving and credit cooperatives depend on members' savings to facilitate their operation. A RUSACCO is essentially a cooperative where members pool their money together and, as the need arises, individual members may wish to borrow from that pooled fund. Members are paid an annual dividend on their savings, which is usually within the range of deposit interest rates offered by formal financial institutions.

The basis for sustainable RUSACCO lending should be members' saving. Initially members were expected to pay a small registration fee and purchase a share to join the RUSACCO. In the study area, members have both compulsory and voluntary savings. The difference between voluntary and compulsory saving are as their name implies in voluntary saving members are not forced to save regularly according to their needs whereas in compulsory saving they must to save regularly. In addition members can withdraw voluntary saving whenever they want whereas in the case of compulsory saving they cannot withdraw money unless they withdraw their membership.

In the study area, members save regularly from crop sales, sales of eucalyptus trees, the trading of small ruminants and chickens, the sale of livestock products (such as egg, milk, butter etc.), participating in off-farm activities (such as crafts, petty trading, casual labour, small restaurants or the sale of collected firewood).

Table 8. 1: Sampled Rural Saving and Credit Cooperatives Saving and Loan Status

Serial No	RUSACCO	Savings Amount in Birr	Lending Amounts in Birr	Repayment in percentage	Loans as a percentage of Savings
1	EdgBirrer	16750	56000	100	334
2	Yalemtsehay	11692	53860	100	461
3	Addis Alem	38509	24400	100	63.6
4	Tesfa	20520	28290	100	138
5	Gojam Ber	40727	129727	100	319

Source: Sampled RUSACCOs' financial documents 2011

The total amount of saving in the study cooperatives was very small. Average members' saving was 1,959.21 Birr (85.17 Euro). Members' average monthly saving was also very small at only 26.53 Birr (1.15 Euro) (see table 8.2 below).

Table 8. 2: Respondents Total Saving in RUSACCO

Members Total Saving			Monthly Saving	
Amount	Number of Savers	percentage	Status	Amount/ percentage
<500	15	8.67	Initial Av. Monthly Saving	14.62 EB
501-1000	49	28.32	Current Av. Monthly saving	26.53 EB
1001-1500	31	17.92	Growth rate	81 %
1501-2000	30	17.34	Members who increased monthly saving	63.91%
2001-2500	13	7.51	Members who decrease monthly saving	2.26%
2501-3000	8	4.62		
3001-3500	6	3.47		
3501-4000	5	2.89		
>4000	16	9.25		
Mean Saving	1959.21			

Source: Sampled RUSACCOs financial documents

The development of good savings habits and a healthy attitude to money from an early age are important determinants of financial capability (Turner & Manturuk, 2012). RUSACCOs tried to improve the savings culture of the society by different mechanisms. For instance, RUSACCOs offered young children a voluntary saving service. From five sampled RUSACCOs, four were providing a young saving service. The average saving of a young was 145 Birr (see to table 8.3 below). However, non-members, including young savers, were not able to borrow from the cooperative. Moreover, in one sampled RUSACCO, they designed a new arrangement. According to participants they established informal financial institutions by the name of different gospels and angels (ROSCAs) in each village because the majority of the residents are Ethiopian Orthodox Church followers. This arrangement helps to promote the residents saving behavior and to join the RUSACCO. Moreover, the society also has experience in such kinds of association. Both members and non-members of RUSACCO are participating in ROSCAs.

Table 8. 3: Young Saving

Woreda	Name of RUSACCO	Number of savers	Amount of saving in Birr	Average saving in Birr
	Gojam Ber	66	12125	183.71
Dejen	Tesfa	103	10632	103.22
	Addis Alem	24	6273	261.38
Lay Gayint	Ediget Ber	14	984	70.29
Total		207	30014	145.00

Source: Sampled RUSACCOs financial documents

ROSCAs have their own saving account in RUSACCO. Now ROSCAs are serving as a window for discussion about the benefit of saving and credit cooperatives. The final goal of such arrangement is to increase the member of RUSACCO.

The accountant of Edget Ber RUSACCO, female, age 35 told us;

> "*the society has good experience in ROSCAs but a bad image of cooperative types of organisation. Therefore, to change the attitude of the society we have established ROSCAs in each village. These ROSCAs have an account in the RUSACCO. The final mission is to enhance the saving culture of the poor and promote non-members to join RUSACCO.*"

8.5.1 Determinants of Households' Saving in RUSACCO

8.5.1.1 Econometric model specification

Currently the major activities of RUSACCOs in Ethiopia are collecting deposits (savings) and providing loans. Therefore, this study has tried to examine these vital activities of the RUSACCOs. In the first stage, RUSACCO members' socioeconomic and demographic determinants of saving were analyzed by using a multiple linear regression model. According to Maddala & Lahiri (1992), multiple linear regression is an important model to analyze data when the dependent variable is continuous. It is a much wider application to determine the extent, strength and direction of the relationship between the dependent and independent variables in linear as well as non-linear form. Furthermore, multiple linear regression analysis is a general technique, which can be fitted to all kind of variables. For instance, Ur Rehman et al (2011)

analysed the behaviour of household savings among different income groups using multiple regression analysis techniques. Kibet et al (2009) used multiple linear regressions to analyse the determinants of household saving in Kenya. Abdelkhalek et al (2010) assessed the impact of different economic and demographic variables on household savings in Morocco. Berhanu (1993) used linear multiple regression to describe the functional relationship between fertilizer consumption, fertilizer credit and factors influencing both of them.

In this study, the dependent variable - members' amount of saving - was a continuous variable. Moreover, to be a member of a RUSACCO, everybody must save monthly at least the minimum amount of compulsory saving. In other words, it cannot be possible to have a zero level of saving. Therefore, in such conditions the multiple regression technique is very useful to determine the direction and the extent of the relationship between the dependent variable and the explanatory variables. Ordinary least squares (OLS) models the relationship between a collection of independent variables and a dependent variable. Thus, the value of a dependent variable is defined as a linear combination of the independent variables plus an error term.

The model can be specified as follows:

$$Ms = \beta_0 + \sum \beta_i X_i + u_i, \qquad \text{Where } i = 1, 2, 3\ldots$$

Ms = the dependent variable total amount of members saving

β_0 = an intercept (autonomous saving)

β_i = Slope of ith explanatory variable

X_i = Explanatory variable i and can be discrete or continuous

u_i = unobserved disturbance term

8.5.1.2 Hypothesis and definition of variables for members' amount of saving

Based on the literature reviewed and discussion held with stakeholders, the explanatory variables selected for this study were broadly categorized under socioeconomic and demographic factors. A brief explanation of the explanatory variables selected for this study and their influence on households' saving in RUSACCOs is presented below.

Dependent variable (Members' total saving (MS): This is a continuous dependent variable and, which is measured in the amount of members' saving in RUSACCO at the time of survey.

Gender: The gender of the RUSACCO members could be an important factor in determining the saving behaviour. According to previous studies in microfinance institutions, females' saving behaviour was better than males' (Akerele & Ambali, 2012; Babatunde, et al, 2007; Chowa, 2006 and Bime & Mbanasor, 2011). This variable was expressed as a dummy variable, where female members are '1' and male members are '0', and the expected effect of gender could be positive

Age: is defined as of the age of the respondent household head at the survey was conducted. It is a continuous variable. According to different research works there is a negative relationship between age and saving (Kibet, et al, 2009; Bime & Mbanasor, 2011 and Uneze, 2013), since older households may accumulate more wealth than younger ones, and may not want to take risk for long term investment. Therefore, the expected relationship between age and members savings was negative.

Primary occupation: Some occupations, like farming in the Ethiopian case, generate income once or twice a year while other activities generate more or less uniform income throughout the year (like salary, petty trade). This implies that households whose primary occupation is outside farming may save more than households who participate in farming activities (Akerele & Ambali, 2012 and Kibet, et al, 2009). This variable was expressed as a dummy variable, with members who participate in farming = 1 and 0, otherwise. Therefore, the expected relationship between occupation and members' savings would be negative.

Marital status: It is a dummy variable represented by 1 if the member is married, 0 otherwise. It is assumed that married households can handle and manage their overall livelihood (social duties and economical activities) better than households who are divorced, widowed, or single. However, non-married households exposed to different risks and uncertainties (Chambo, 2009 and Rahman, 2010). Thus, married households are expected to save less compared to divorced, widowed and single households. Then the expected relationship between marital status and members' savings was negative.

Educational level: This is a discrete variable measured by level of educational attainment. It is assumed that households with better education levels can easily understand the importance of saving than illiterates. Moreover, a higher education level related with better income and they may participate in different income generating activities. Therefore, the educated members, ceteris paribus, may have a higher amount of saving in a RUSACCO than illiterates. So the expected relationship was positive (Akerele & Ambali, 2012; Akpan, et al, 2012; Babatund, et al, 2007; Kibet, et al, 2009; Bime & Mbanasor, 2011 and Rahman, 2010).

Family size: This is the total number of family members in the household. If the number of members of the household increases, it was expected that consumption expenditure will increase and the amount of saving will be less. Therefore, it was expected that this variable will have a negative impact on household saving. This implies the relation between family size and members savings was negative (Akerele & Ambali, 2012; Akpanet al, 2012; Zhu, 2004 and Bime & Mbanasor, 2011)

Farming experience: It was expected that formal financial markets are vital to farmers as they help provide services to enhance the resources into the production process. That means their linkage in saving and borrowing activities with RUSACCO will increase. The anticipated relationship between farming experience and members savings would be positive (Osaka, 2006).

Size of land: This refers to the total cultivated land holding by the household. What is more important is that a farmer with a large farm size has a better chance to earn more income which in turn enables them to save more in the RUSACCO (Babatund et al, 2007 and Bime & Mbanasor, 2011). In other words, a farmer with a large farm size is relatively wealthier than a farmer with a small farm size. The anticipated relation of this variable would be positive.

Livestock: This is a continuous variable represented by the number of livestock owned by rural poor and measured in one common unit (TLU). It is assumed that households who have more livestock have a good asset base and are able to generate better income. Therefore, it is hypothesized that this variable influences members' saving positively (Uneze, 2013).

Household income: This shows the total annual income of the households during the survey year. The household income was expected to affect positively the amount of members' saving in

their RUSACCO. Therefore, the expected relation of this variable was positive (Bime & Mbanasor, 2011 and Rahman, 2010).

Consumption expenditure: This shows the total amount in EB of households' consumption expenditure in a year. This variable is important because, in developing countries, the majority of households' income is used for consumption. Households which spend more on consumption were expected to save a small amount in their RUSACCO. Therefore, the expected relation of consumption expenditure on amount of saving was negative (Bime & Mbanasor, 2011).

Distance from RUSACCO: This is the measure of the transaction cost for depositing in and borrowing from RUSACCO. The farther the distance between the rural poor member and the RUSACCO would lead to less interaction and limited saving in a RUSACCO. The expected relationship between distance and members' savings would be negative (Bime & Mbanasor, 2011 and Puaha & Tilley, 2003).

Date of membership: This is the length of time that the RUSACCO member had been a member of the RUSACCO. The longer the time of membership implies greater trust in the RUSACCO which could have an effect on their saving behaviour. Therefore, the expected effect of this variable on saving is positive (Babatund et al, 2007; MJ, 2011; Rahman, 2010).

Participation in other financial institution: If members use another alternative financial institution that provides similar service to the RUSACCO, it becomes a competitor and decreases the amount of saving in the RUSACCO. This variable was expressed as a dummy variable, where members who participate '1' and '0', otherwise. Therefore, the expected relationship between this variable and members savings would be negative (Kibet et al, 2009).

Participation in local leadership: Members' participation in local leadership helps us to know more about the important of saving. In addition, most local leaders have more economic base than the other ordinary members. Therefore, the expected relationship between this variable and members savings is positive (Akpan et al, 2012).

Participation in additional income generation activities: This variable was expressed as a dummy variable, where members who participate = 1 and 0, otherwise. Participation of members in additional income generation activities need additional financial resource and also will

generate additional income to the participant. This implies the members' propensity to save will increase. Therefore, the expected relation would be positive (Osaka, 2006).

8.5.2 Estimation of Results and Discussion

8.5.2.1 Total Sample Households

The ordinary least square regression analysis result shows the determinants of members' saving in the RUSACCO. The result indicated that the primary occupation of respondents, farm experience and income of the household were the significant factors affecting the amount of money saved in a RUSACCO by households in the study areas (see table 8.4). Income had positive relation. However, primary occupation and farm experience had negative relation.

Primary occupation of the household was negative and significant at $\alpha = 0.01$ level of significance. Here it should be recalled that 'primary occupation' was a dummy variable where farming was '1' while non-farming was scored '0'. Hence, a negative value means a household whose primary occupation is farming saves less than non-farm primary occupation members. The amount of -15.735 means that, ceteris paribus, the average household that raised the majority of income through farming saved 15.73 Birr less than households involved in non-farm activities. This may be due to the seasonal nature of agricultural products.

Farming experience was negative and significant at $\alpha = 0.01$ level of significance. The negative relation shows there was a negative relationship between farming experience in years and the amount of saving in RUSACCO. An increase in farming experience causes a decline in the amount of saving. The value -0.839 shows a 10 year increase in farming experience decreases the amount of saving by 8.39 Birr in the study area, where all other factors kept constant.

Income of the household was also positive and significant at $\alpha = 0.10$ level of significance. The positive relation implies that the amount of saving in a RUSACCO increases when the household income increases in the study area. The coefficient of income 0.001 shows an increase of the household income by one thousand will cause a 1 Birr increase in the respondents' saving in the RUSACCO.

The $R^2 = 0.2027$ means that 20.27% of the total change in members saving in RUSACCO among the sampled household were accounted for by the variable included in the model. The

implication is that around 79.73% variation was due to other factors, therefore, further research should be conducted to find more relevant variables capable of explaining more variation in the amount of saving.

8.5.2.2 Determinants of amount of saving in food secured and in-secured Wordas

From the finding of the study, the determinants of amount of saving in food insecure *Woreda*, Lay Gyint different from food secured *Woreda*, Dejen. In Lay Gayint *Woreda*, Marital status, family size and consumption expenditure influence member households amount of saving. In contrast, in Dejen *Woreda*, farming experience and distance from RUSACCO influence member households' amount of saving.

In Lay Gayint *woreda*. The amount of -18.654 means that, under ceteris paribus, the average household that raised the majority of income through farming saved 18.65 Birr less than households involved in non-farm activities. If all other things kept constant, an increase in the member of household decreases the amount of saving by 2.71 Birr. And a 1,000 Birr increase in the household consumption expenditure will cause a 1 Birr increase in the respondents' saving in the RUSACCO.

In Dejen *Woreda*. If all other things kept constant, an increase in member households farming experience causes a decline in the amount of saving. The value -1.029 means that, ceteris paribus, a 10 year increase in farming experience decreases the amount of saving by 10.29 Birr in the study area, where all other factors kept constant. Similarly, if all other things kept constant, an increase in distance causes a decline in the amount of saving. The value -.644 shows a 10 minutes increase in distance from RUSACCO decreases the amount of saving by 6.44 Birr in the study area, where all other factors kept constant (see table 8.4 below).

Table 8.4: Multiple Linear Regression (OLS) Results on Determinants of Members saving

Variables	Lay Gayint		Dejen		Average	
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
Gender (X_1)	-2.000	-0.57	2.846	0.39	.450	0.12
Age (X2)	-.319	-1.15	.394	0.94	.183	0.74
Occupation (X3)	-18.654	-3.08***	-7.612	-0.71	-15.735	-2.70***
Marital Status (X4)	1.988	0.29	-22.341	-1.12	-8.759	-1.04
Educational Level (X6)	4.207	0.75	9.265	0.77	5.914	0.92
Family Size (X5)	-2.712	-2.41**	-.900	-0.38	-1.555	-1.24
Farming experience (X7)	-.074	-0.26	-1.029	-2.58**	-.839	-3.56***
Size of land (X8)	-6.393	-1.10	-6.550	-1.02	-4.343	-1.17
Livestock (X9)	.101	0.12	1.794	1.09	.839	0.90
Income (X10)	.001	0.57	.001	1.38	.001	2.07**
Consumption (X11)	.001	2.05**	-.001	-1.18	.001	0.08
Distance from RUSACCO (X12)	.025	0.44	-.644	-2.33**	-.066	-0.83
Date of Membership (X13)	-.384	-0.62	-.571	-0.50	-.875	-1.35
Participation in other FI (X14)	2.882	0.70	-10.997	-1.22	-2.091	-0.44
Participation in local leadership (X15)	-1.185	-0.36	4.119	0.54	.973	0.26
Participation in additional income generation activities (X16)	2.916	0.76	2.068	0.24	-.811	-0.20
Year (X17)	-1.907	-0.63	3.976	0.56	.783	0.22
Constant	819.022	0.66	1213.198	0.53	1806.415	1.39

R^2		**0.4668**		**0.2075**		**0.2027**
Adjusted R^2		0.3829		0.0768		0.1435
	F- Statistics 5.56		**Prob. F stat 0.000**			

Source: **Computed From Field Survey Data, 2011 and 2012** * = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

8.6 Members' Borrowing from RUSACCO

8.6.1 Introduction

Loans are granted from the members' accumulated savings. Members are granted loans in accordance with the amount of their savings. Loans are made for a variety of purposes. Loans are made for purchasing inputs like fertilizer and seed, for purchasing dairy cows and farm equipments, for petty trade such as crop and animal trading, cloth trading and pottery manufacturing. Credit is also issued for construction of houses, household equipment or renting land. In addition, members can also borrow for consumption purpose (health, education and food).

In most of the sample RUSACCOs members can get credit which is three times the amount of compulsory saving. However, members are eligible to borrow after six months' membership in the RUSACCO. Moreover, a member needing a loan must offer sufficient personal guarantees to ensure that the cooperative will be able to collect the debt. The average amount of borrowing in the study area was 1,675.12 Birr (71.89€). Loan interest rates ranged between 8% and 10%. The repayment rate is 100% which is extremely positive for the RUSACCOs.

Members can borrow for different purposes. For example, in group discussion in one area, participants confirmed that they borrow for various purposes; for agricultural input purchase, livestock, petty trade, medication, covering schooling cost and other related issues. In the household survey, a majority (27.75%) of borrowers used the borrowed fund for purchasing fertilizer (see table 8.5 below).

Table 8. 5: Distribution of members' borrowing according to purpose

No	Purpose	Frequency	Percentage
1	Purchasing Fertilizer	53	27.75
2	Purchasing Livestock	33	17.28
3	Petty Trade	33	17.28
4	Renting Land	6	3.14
7	Consumption Expenditure	35	18.29
Total		**170**	**100**

Source: **Computed From Field Survey Data, 2011 and 2012**

8.6.2 Determinants of Members' Borrowing

Demographic variables, economic variables and variables which serve as a proxy for social interaction of individuals are included as explanatory variables in modelling the determinants of members' borrowing.

8.6.2.1 Econometric model specification and estimation

Tobit is an extension of the Probit model and its name was derived from Tobin who devised it. There are several occasions where the variable to be modeled is limited in its range. Because of the restrictions put on the values taken by the regressand, such models can be called limited dependent variable regression models. Stewart (2009) reported that the Tobit model is the predominant and, seemingly, sensible approach to use as it is developed specifically for situations where the dependent variable is truncated at zero or another cut-off. However, OLS estimates become biased and inefficient depending on the number of zeros in relation to the number of observations in the data set. Tobit models have been estimated to analyse variables that can take on only positive or zero values, such as time, amount of borrowing and money expenditures (e.g. Kim et al, 2010; Guo & Peck, 2009).

The greater the number of zeros in relation to the total number of observations, the greater the instability of the OLS estimates and vice versa (Wilson & Tisdell, 2002). According to Foster & Kalenkoski (2010), tobit models address the significant censoring (i.e., large numbers of zeros) because linear models ignore this censoring, OLS estimation leads to biased and inconsistent estimates.

In this study, a significant number of members (around 37%) didn't borrow from their RUSACCO. Therefore, it was worthwhile to use the tobit model to analyse the determinants of members' borrowing from RUSACCOs. The model can be specified as follows:

$$Mb_i = x_i\beta + \varepsilon_i \qquad\qquad\qquad (1)$$

Where Mb_i is an amount of money borrowed by the member,

X_i is a vector of the respondent's socioeconomic and demographic characteristics,

β is a vector of parameters to be estimated,

And ε_i is a random error.

In this study Mb_i values were censored at zero, i.e. all reported Mb values are larger or equal to zero. The specification of the tobit model is:

$$y_i^* = x_i\beta + \varepsilon_i \tag{2}$$

where y_i^* is a latent (unobservable) variable for Mb_i, and $\varepsilon_i \sim N(0, \sigma^2)$, i.e. normally distributed (Baum, 2006, p.263).

The observed y_i counter part of y_i^* can be expressed as:

$$y_i^* = y_i, \text{ if } y_i^* > 0$$

$$y_i = 0, \text{ if } y_i^* \leq 0 \tag{3}$$

8.6.2.2 Hypothesis and definition of variables for members' amount of borrowing

Based on the literature reviewed and discussion held with stakeholders, the explanatory variables were identified. A brief explanation of the explanatory variables selected for this study and their influence on members' amount of borrowing are presented below.

Dependent variable (Members' total borrowing (Mb)): This is a continuous dependent variable which is measured by the amount of members' borrowing from their RUSACCO at the time of survey.

Gender: The gender of the RUSACCO members could be an important factor in determining borrowing behaviour. According to previous study in microfinance institutions, females usually borrow less than males. This variable was expressed as a dummy variable, where female members = 1 and male members = 0, the expected relationship between gender and members borrowing could be negative (Akpan et al, 2013; Andreou, 2011 and Bime & Mbanasor, 2011b).

Age: This is defined as the age of the household head at the time the survey was conducted. It is a continuous variable. Older members focus on immediate consumption rather than taking the risk of long term investment and they have better wealth than younger members. Therefore, this variable is hypothesized to have a negative relationship with members' amount of borrowing (Andreou, 2011 and Bime & Mbanasor, 2011b).

Primary occupation: In farming occupation there were no year round activities compared with other activities. The credit demand of farmers is usually once or twice a year. On the other hand, most of the non-agricultural activities are year round. This implies that households whose primary occupation is outside farming may borrow more than households who participate in non-farming activities (Gandhimathi & Vanitha, 2010). This variable was expressed as a dummy variable, where members who participate in farming = 1 and 0, otherwise. Therefore, the expected relationship between occupation and members' borrowing would be negative.

Marital status: this is a dummy variable represented by '1' if the member is married, '0' otherwise. It is assumed that married households are involved in different social and cultural activities than households who are divorced, widowed, or single. Therefore, married households borrow more compared to divorced, widowed and single households. The expected relationship between marital status and members' borrowing of this variable was positive (Andreou, 2011).

Educational level: This is a discrete variable measured by level of educational attainment. It is assumed that households with better education level can easily understand the importance of borrowing compared to illiterates. Moreover, they may participate in different income generation activities. Therefore, the educated members' amount of borrowing from a RUSACCO, ceteris paribus, may be more than that of illiterates. So the expected relation would be positive (Acquah et al, 2012; Bime & Mbanasor, 2011b; and Nwaru et al, 2011).

Family size: This is the total number of family members in the household. If the number of members of the household increases, it was expected that consumption expenditure will increase and they may participate in other income generation activities that demand external source of finance. Therefore, it was expected that this variable would have a positive relationship with household borrowing (Del-Río and Young, 2005).

Farming experience: It was expected that formal financial markets are vital to farmers as they help provide services to enhance the resources for input into the production process. That means their linkage in saving and borrowing activities with a RUSACCO will increase the more farming experience they have. The anticipated relation of this variable would be positive (Acquah et al, 2012 and Bime & Mbanasor, 2011b).

Size of land: this refers to the total land holding of the household. The larger the land holding is the more input demand. To finance input purchase, farmers usually look for other financial resources (credit). Hence, this variable is hypothesized to have a positive relationship with the amount of borrowing. The predicted relation of this variable would be positive (Acquah et al, 2012; Bime & Mbanasor, 2011b and Oboh & Kushwaha, 2009).

Livestock: this is a continuous variable represented by the number of livestock owned by the rural poor and measured in one common unit (TLU). It is assumed that households who have more number of livestock have good asset base and should able to manage carefully. Livestock production demands different inputs like feed, veterinary. The demand for other sources of finance is very important for viable livestock production activities. Therefore, it is hypothesized that this variable influences member's borrowing positively (Andreou, 2011).

Household income: This shows the total annual income of the households during the survey year. The household income was expected to relate positively with the amount of members' borrowing. Thus, the expected relation of household income was positive (Acquah et al, 2012, Bime & Mbanasor, 2011b; Nwaru et al, 2011 and Oboh & Kushwaha, 2009).

Consumption expenditure: It shows the total amount in EB of households' consumption expenditure in a year. This variable is important because in developing countries majority of households' income spend for consumption. Households which spend more amounts for consumption were expected to require more external finance (e.g., loan from RUSACCO). Therefore, the expected relation of consumption expenditure on amount of borrowing was positive.

Distance from RUSACCO: It is the measure of transaction cost depositing and borrowing from RUSACCO. The further the distance between member rural poor and RUSACCO would lead to less interaction and limited save in RUSACCO or they may use informal financial institutions. The expected relation would be negative (Bime & Mbanasor, 2011b and Puaha, 2003).

Date of membership: This is date in year of joining RUSACCO. The longer the time of membership means the greater the trust on the RUSACCO which could have effect on their borrowing behaviour Therefore, the expected effect of this variable on borrowing is negative.

Participation in other financial institution: If members use other alternative financial institution that provides similar service with RUSACCO, it becomes the competitor and decreases the amount of borrowing from RUSACCO. This variable was expressed as a dummy variable, where members who participate = 1 and 0, otherwise. Therefore, the expected relation of this variable would be negative.

Participation in local leadership: Members participation in local leadership helps to know more about the importance of investment. In addition most local leaders can easily learn about new technologies that demand additional financial resource. Therefore, the expected relation of this variable is positive (Akpan et al, 2013).

Participation in additional income generation activities: Participation of members in additional income generation requires additional financial resources and will generate additional income for the participant. This implies the number of transactions between a RUSACCO and the member will increase. This variable was expressed as a dummy variable, where members who participate = 1 and 0, otherwise. Therefore, the expected relation would be positive.

Table 8. 6: Tobit Results on Determinants of Members' Borrowing

Explanatory Variable	Lay Gayint			Dejen			Average		
	Coefficient	dy/dx	t-stat	Coefficient	dy/dx	t-stat	Coefficient	dy/dx	t-stat
Constant	986332.2		3.07***	1133985		3.16***	1060881		4.33***
Year	310.937	.016	0.40	-1412.759	-.099	-1.36	-584.147	-.035	-0.87
Gender	336.136	.017	0.36	-606.262	-.042	-0.60	-93.637	-.006	-0.13
Age	-126.633	-.007	-1.76*	-61.369	-.004	-1.01	-107.012	-.006	-2.39**
Occupation	-1290.097	-.057	-0.82	-2877.746	-.158	-1.74*	-2340.567	-.115	-2.10**
Marital Status	2466.617	.171	1.26	3858.845	.334	0.94	400.643	.025	0.24
Educational Level	1507.558	.093	0.95	-1932.789	-.113	-1.09	46.01	.003	0.04
Family Size	-83.055	-.004	-0.27	368.254	.025	1.01	20.598	.001	0.09
Farming experience	237.526	.012	3.34***	-35.302	-.002	-0.60	81.381	.005	1.86*
Size of land	-1104.997	-.058	-0.72	-1279.879	-.088	-1.43	-559.460	-.034	-0.86
Livestock	-399.765	-.021	-1.80*	-1.452	-.0001	-0.01	-220.001	-.013	-1.32
Income	-.002	-.004	-0.05	.055	.0001	1.78*	.036	.0001	1.42
Consumption	.203	.004	1.24	.173	.0001	1.06	.240	.001	2.12**
Distance from RUSACCO	20.066	.001	1.35	-40.448	-.003	-1.01	14.662	.001	1.05
Date of Membership	-496.810	-.026	-3.09***	-565.726	-.039	-3.16***	-530.112	-.032	-4.34***
Amount sav	137.360	.007	5.64***	28.105	.002	1.83*	63.721	.004	4.98***
Participation in other FI	849.901	.041	0.80	-516.485	-.037	-0.42	1093.308	.061	1.31
Participation in local leadership	2678.001	.133	3.14***	-965.627	-.066	-0.90	850.245	.051	1.24
Participation in other income generation activities	2260.188	.138	2.16**	364.470	.025	0.31	1683.03	.103	2.21**
LR chi2			91.65			36.67			95.48
Pseudo R2			0.0412			0.0198			0.0233

Source: **Computed From Field Survey Data, 2011 and 2012**

8.6.3 Estimation of Results and Discussion

Table 8.6 shows the average and sampled *Woreda*s results separately. This section presents both the average condition and, compare and contrasts the food secured and in-secure *Woreda*s RUSACCO members' determinants of amount of borrowing.

8.6.3.1 Total Sample Households Results and Discussions

The results revealed that the age of respondents, primary occupation, farming experience, consumption expenditure, date of membership, amount of saving and participation in other income generation activities were the significant factors that affect the members' borrowing from the RUSACCOs in the study areas.

The ages of respondents had a negative coefficient and significant at $\alpha = 0.05$ level of significance. The implication is that the older the member the less the amount of borrowing. Similarly from the marginal effect result, when members' age increases by 10 years, the amount of borrowing decreases by 0.06 Birr. The reason may be that younger rural poor have limited land and they try to participate in other income generating activities. To participate in these income generation activities they need credit. Moreover, compared with young rural poor, elders are pessimistic about joining new ventures and may have other sources of lending to meet their credit demands.

The primary occupation of the respondents was negative and significant at $\alpha = 0.05$ level of significance. The results indicated that members involved in farming activity demand credit less than members involved in non-farming activities. Members who are involved in non-farming activities borrowed 0.11 Birr more than those members who are primary occupation were farming. The implication of this result is that individuals who participated in non-farm activity run their business through borrowing from a RUSACCO compared with households involved in farming.

The farming experience of respondent was significant at $\alpha = 0.10$ level of significance. The results indicated that the longer the farming experience, the more the demand for RUSACCO credit. When members' farming experience increased by 10 years, the amount of borrowing from a RUSACCO increased by 0.05 Birr.

The annual consumption expenditure of respondents was significant at $\alpha = 0.10$ level of significance and positive relation. This showed households with high consumption expenditure borrowed more from RUSACCOs compared with households with less annual consumption expenditure. When members' annual consumption expenditure increases by 100 Birr, the amount of borrowing from RUSACCO increases by 0.10 Birr. The result reveals that if members borrow gradually, their consumption expenditure increases either by investing the borrowed funds in productive activity and generating additional income for their family consumption or by utilizing directly borrowed funds for family consumption.

Date of membership was significant at the ($\alpha = 0.01$) level of significance and negative relation with the amount of borrowing. A year's delay in joining a RUSACCO decreased the amount of borrowing by 0.03 Birr. In other words, one additional year's membership in a RUSACCO increases the amount of borrowing by 0.03 Birr. It showed the demand for credit increases as the length of membership in a RUSACCO increases in the study area. The rationale for this may be, if members stay a long time in a financial institution, they develop confidence through experience and exchanging information from other members about the benefit of credit. Moreover, through time, the amount of members' was saving increases, which also promotes members to borrow more from their cooperatives. Therefore, as members stay in cooperatives their willingness to accept risk and borrow from a RUSACCO will increase.

The amount of savings of member respondents was significant at the ($\alpha = 0.01$) level of significance and positive relation. If members' amount of saving increases 1,000 Birr, the amount of borrowing increases by 4 Birr. This implies there is a direct relationship between the amount of saving and members' amount of borrowing.

Participation in other income generating activities was also significant at the ($\alpha = 0.01$) level of significance and had positive relation. When members are involved in other income generation activities, the amount of borrowing from a RUSACCO will increase. The study revealed that when members were involved in additional income generation activity, the amount of borrowing from a RUSACCO increased by 0.10 Birr. It showed that households involved in other income generation activities demand more credit than those who operated only one activity. The result indicates that if the rural poor participate in other income generation activities, they usually require additional financial resources. Therefore, to cover the new demands for financial

resources, they usually seek financial institutions and in this regard the RUSACCO is their immediate choice.

8.6.3.2 Determinants of Borrowing in two Sampled Wordas

Independently in both Lay Gayint and Dejen *Woreda*s, date of membership and amount of saving influence members' amount of borrowing from their RUSACCO. In Lay Gayint *woreda*, a year delay in joining a RUSACCO decrease the amount of borrowing by 0.03 Birr. In other words, one additional year's membership in a RUSACCO increases the amount of borrowing by 0.03 Birr. Whereas in Dejen *woreda,* one year delay in joining a RUSACCO decreases the amount of borrowing by 0.04 Birr. In other words, one additional year's membership in a RUSACCO increases the amount of borrowing by 0.04 Birr.

Similarly from the marginal effect result, in Lay Gayint *woreda*, if members' amount of saving increases by 1,000 Birr, the amount of borrowing increases by Birr 7. Whereas, in Dejen *woreda* if members' amount of saving increases by 1,000 Birr, the amount of borrowing increases by 2 Birr.

However, in Lay Gayint *woreda*, age, farming experience, participation in local leadership and participation in other income generation activities also influence members' amount of borrowing. In contrast, in Dejen *woreda* member households' occupation and income level influence members' amount of borrowing from their RUSACCO.

In Lay Gayint *woreda*, when members' age increases by 10 years, the amount of borrowing decreases by 0.07 Birr. If members' farming experience increased by 10 years, the amount of borrowing from a RUSACCO increased by 0.12 Birr. When members were involved in local leadership, the amount of borrowing from a RUSACCO increased by 0.13 Birr. The study also indicated that when members were involved in additional income generation activity, the amount of borrowing from a RUSACCO increased by 0.14 Birr.

In Dejen *woreda*, households involved in non-farming activities borrow from RUSACCO 0.16 Birr more than those involved in farming activities. Moreover, according to the finding of the study, a 10,000 Birr increase in member households' income will increase a 1 birr amount of borrowing from their RUSACCO (refer back to table 8.6).

8.7 Summary and Conclusion

Members are vital organs of cooperatives. In other words, a cooperative is nothing without the active participation of cooperators. This chapter examined the participation of members in different activities of the RUSACCO. The basic areas of participation in Ethiopian RUSACCOs are decision making, training, dividend, saving and credit activities.

Members' participation in decision making includes attending general assembly and/or as a board or other committee member. A cooperative is a unique institution where each member is equal. In this regard in the study areas, the majority of the participants attend the general assembly meeting. However, the participation of women in providing or sharing their ideas was very limited and it may be due to cultural influence. Most of members are willing to participate in different committee memberships. Some members are not willing to be a member of a committee because they are illiterate and they believe that to be a member of a committee one must be literate.

Cooperative training is very useful for cooperators. Members should know the principles of cooperatives and other similar issues. The regional cooperative promotion agency and NGOs have played a significant role in providing training and funding the training cost respectively. In the study areas, all management committee have received training from the cooperative promotion agency. However, management committees have tried to aware the rest of members and others during cooperative meeting or other public gathering. The performance in this area is very weak. The training demands of the society are not satisfied.

A dividend is an incentive for active economic participation of members. Especially in the Ethiopian case it has additional advantage because of the past negative cooperative history. The reason is it helps to develop a sense of ownership. In the study areas, the majority of members received dividend, but very small.

The two basic activities of RUSACCOs in Ethiopia are member saving and loan. This research suggests that the majority of RUSACCOs collect savings once a month because they are run by elected members. The amount of saving is also very small which was given as a reason by some non-member in group discussions for their lack interest to join a RUSACCO. Based on the research findings, members' saving was determined by a number of socioeconomic and

demographic factors. In this study the major factors that affect members saving are; household head occupation, farming experience and households income.

Member borrowing is another basic activity of the RUSACCOs. Loans are provided for different purposes. The interest rate compared with other financial institutions is very small between, i.e. 8-10%. One interesting issue in RUSACCO credit in the study area is there is no default. Similarly, members' borrowing is affected by different socio-economic and demographic factors. Based on the research findings, it was concluded that in the study area the socio-economic and demographic factors that influence members' borrowing among hypothesized variables are; age of respondents, household head occupation, farming experience, consumption expenditure, date of membership, amount of saving and participation in other income generation activities.

CHAPTER NINE

IMPACT ON FOOD SECURITY

9.1 Introduction

Chapter eight covered the participation of members in various activities of RUSACCO. Yet participation by itself cannot be the end goal of cooperation. Therefore, this chapter focuses on the impact of RUSACCOs on member households' food security.

Migotto et al (2006, p.1) state that, *"food security measurement may entail and benefit from the combination of both "qualitative-subjective" and "quantitative-objective" indicators"*. In this study, the impact of RUSACCOs on food security was analyzed by using both qualitative and quantitative analysis. The qualitative impact assessment focuses on the participants' attitude about the benefits of RUSACCO on members' food security in particular and livelihood in general.

The qualitative approach of the FGDs and interviewing key informants concerned participants' justification for setting up of RUSACCOs in the community, the main changes which occurred after the establishment of the RUSACCO, the change in saving and credit habits of members in particular and society in general, and their perception of the role of the RUSACCO in improving member households' food security. Moreover, the views of RUSACCO employees' and government experts' (cooperative promoters) views were also incorporated. This technique merely focused on their opinion on the usefulness of the RUSACCO to member households' food security.

The quantitative technique was focused on the results of basic variables, including their test statistics and matching estimates of the average treatment effect. There are a number of variables that can serve as indicators for household food security. The primary measures of household welfare are per capita income, total expenditure, food expenditures, and savings (Kondo et al, 2007). In this study, household food security was assessed using the annual consumption expenditure of the households and food expenditure.

9.2 What is the Contribution of RUSACCOs to Household Food Security?

Many of the respondents acknowledged the impact of the RUSACCO on households' food security. According to the respondents, the RUSACCO promotes a saving culture and creates more commerce within the communities in which they are located. This contributes to local economic dynamism, a decrease in poverty and an increase in prosperity leading the households to secure food.

In Ethiopia, RUSACCOs serve people to avert the problem of food security. For example Stanley Kuehn, WOCCU's program director in Ethiopia in March 2012 said,

> *"we are not introducing new crops, but instead providing greater access to credit so farmers have the resources they need to increase their yields, improve their finances and feed their communities."*[17]

FGD participants explained different points on the improvement of households' food security because of the establishment of the RUSACCO.

For instance, a member of Gojam Ber RUSACCO, (male, age 35) compares himself with his friend who previously had an equal economic condition. He said that:

> *"My friend and I held equal economic status before joining the RUSACCO. When I was joining the RUSACCO my friend was not happy to do so and it may be due to past bad experience with cooperatives. Now the economic gap between me and my friend is very wide. I have cross bred cows and a lot of money in my saving account. Moreover, my family diet also improved because we have utilized part of our dairy produce for household consumption. Whereas my friend has encountered many problems, for instance, last year he was forced to sell his oxen to purchase fertilizer."*

Participants understood that RUSACCOs help the rural poor to ensure consumption throughout the year. The RUSACCO has promoted consumption smoothing (year round consumption) for

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[17] *http://www.cuna.org/Webassets/Pages/NewsNowArchive27/08/2012*

the rural poor in the study area. RUSACCOs promote consumption smoothing for the farming and non-farming population in different ways.

Members who were involved in farming practice before the establishment of the RUSACCO were forced to sell their product immediately after harvest when the prices of agricultural product are very low. Fulfill the financial requirements for different activities such as children education and other social and legal obligations. However, after the establishment of the RUSACCO, members who are involved in farming activities borrow money in peak periods so they need not sell their agricultural product cheaply. In this regard, participants appreciate RUSACCOs for arranging credit in this period and also avail of a three month repayment period.

Alemtsehay RUSACCO board member, age 42 noted that,

> *"our land fertility and size of land declined over time due to long years of cultivation and population pressure. Moreover, before the establishment of our RUSACCO we were forced to sell our limited agricultural product immediately after harvest at cheap rates. Then after three months we cannot feed our children and depend on food aid. Now thanks to RUSACCO we are not forced to sell our limited product at low prices. We can borrow from the RUSACCO at a fair interest rate when we need it and repay the credit either by working elsewhere, example daily laborer in nearby towns or sell the product when the price of agricultural product improves."*

On the other hand, non-farming members also acknowledged the benefit of the RUSACCO in the reverse way. Those members involved in non-farm and off-farm activities noted that they save money in the RUSACCO throughout the year and borrow at peak harvest times to purchase crops that can feed the family year round, because the price of agricultural products are relatively very low at peak times.

A member of Edget Ber RUSACCO, age 32, female said that,

> *"usually at slack periods we encountered food scarcity because the price of agricultural products is very high. Now, thanks to our RUSACCO we can save throughout the year and borrow at peak time and purchase annual consumption when the price of agricultural product relatively very low."*

It was noted that the RUSACCO promotes the working culture of the rural poor and their entrepreneurial skills. Entrepreneurship is an active process of recognising an economic demand and supplying the factors of production, i.e. land, labour and capital to satisfy that demand, which usually helps to generate a profit (Vincent, 2004). RUSACCOs help members to enhance their entrepreneurial spirit by making loans accessible and providing assistance through offering information and training. Moreover, to fulfill their monthly compulsory saving, they were forced to find a means of generating additional income by themselves. These situations promote members of families to participate in various activities by utilizing RUSACCO financial resources. Moreover, younger poor people do have limited access to land and they can participate in new activities that can support family food demand. Therefore, creating new jobs that enable households to get additional income is another important contribution of RUSACCO to enhance family food security.

A member of Gojam Ber RUSACCO, (male, age 45) explained that,

"before 10 years almost all of our society raised income only by tilling land, even we didn't diversify our income source like through fattening of animals and other agricultural activities. Now thanks to RUSACCO and other development partners our area looks like urban center we all participate in different income generating activities (like participation in other agricultural activities, petty trade, etc.). These activities increase our income, and income increase in turn promotes our family food security.''

A member of Andinet RUSACCO, (male, age 60), said that:

"before joining Andinet I was forced to rent my land cheaply and the majority of the time our family life depended on food aid. Now, I can cultivate my land and produce good amount of agricultural product that can at least cover my family food demand."

A Board member of Edget Ber RUSACCO, (female, age 35) stated that:

"previously because of our backward cultural influence we were not involved in some selected activities; however in that time we couldn't even feed our children well and the family in general. Now thanks to our RUSACCO, to fulfill our monthly compulsory saving in our community we borrow money and participate in any activity, there is no selection of

job. Everybody is involved in different activities that can help him/her to generate additional income. Our entrepreneurship skill has developed. Moreover, we mitigate gender biasedness now no male job only or no female job only. Men have involved previously considered as women job, and the vice versa for women."

Other groups reported that the impact of the RUSACCO in promoting members' value addition activities. Value addition increases the value of the product for the customer and result addition of net worth by the effort of mankind. This practice increases family income and improves family consumption both in quantity and quality.

A Member of Edget Ber RUSACCO, male, age 34 said that:

"previously we were selling trees. Now to generate additional income some of our members borrowed money from the RUSACCO and purchased carts and horses. We process trees into timber and transport to urban areas to sell for a good price. That means that from processing activity we have received an additional benefit. Moreover, we have utilized the by product for household energy consumption."

Education is one important tool towards eradicating hunger and achieving food security. On the other hand illiteracy increases vulnerability, for instance according to FAO (2005, p.14),

"lack of education undermines productivity, employability and earning capacity, leading directly to poverty and hunger."

Most of the participants noted changes in their ability to provide for their children's education, even at college level,

For instance, Edget Ber RUSACCO member, (age 52, female) said,

"I am widowed. Before the establishment of Edget Ber, I could not feed my three children even once a day. I was totally dependent on food aid and my relatives support. Thanks to CPAR that organised some poor women in this organisation and provided us seed capital, currently my capacity exceeds jus feeding me and my children. I am involved in different activities together with my children. We have enough money. Last year my son joined college and I have covered his cost by borrowing money from Edget Ber."

Another member age 55, male from the same cooperative told us,

"I was very poor person. Our family life was miserable. However, after the establishment of RUSACCO our livelihood totally improved. We feed our families properly. We develop confidence. We can send our children to school. Last year my child graduated with his college diploma and he acknowledged Edget Ber (the RUSACCO) more than me. He told me it is 'Edget Ber's diploma'."

Addis Alem RUSACCO member, (woman, Age 45) also explained,

"previously we sent our young children to urban centres to be hired as a house maid, because we weren't able to feed our children. Now thanks to our RUSACCO we are able to feed our children and even able to send them to school."

They also revealed that they are able to cover medical expenditure; disease is one major factor that affects the physical and financial condition of the rural society. Healthy rural poor can work properly and generate adequate income to feed family members. One type of shock that affects household food security is family health problems. If the family eats very well, the occurrence of health problems is minimal. On the other hand, if household members can be cured, they can easily return back to their jobs. They can work properly and generate income to feed their family. Moreover, if they are healthy their social interaction will be better, so they can improve their way of life and generate income to feed their family. Many participants emotionally told us of the irreplaceable role of the RUSACCO in this regard;

For example, Edget Ber RUSACCO member, age 65, female said,

"previously, most of us cannot cover medical costs, even at a local clinic level. Moreover, we cannot eat very well and are susceptible to different disease. Now, we can borrow enough money that can cover transportation and hospital costs even in big cities. Though I lost my son, for two years I brought him to hospital by borrowing 2,000 Birr from Edget Ber."

Moreover, clothing for their children and improvements in the home were reported directly by respondents. Furniture improvements were also noted, particularly the purchase of beds. Renting additional land for crop production activities and purchases of animals were also recorded such

as milk cows, oxen, equine and sheep. All these benefits help rural poor to increase income and the asset base to mitigate transitory as well as chronic food insecurity.

9.3 Do the Rural Poor Perceive RUSACCOs as Having Produced an Impact on Food Security?

From individual interviews, the respondents replied to the question of what is the impact of the RUSACCO on rural poor food security. Over 97% of surveyed members reported positive changes in their food security in particular and livelihood in general after joining a RUSACCO and around 70% of surveyed non-members believed RUSACCO improved members' livelihood.

Regarding the problem of households' food security, the majority of the respondents stated that they can feed their family at least once a day throughout the year, i.e. 82.35% and 73.94% members and non-members respectively) (see table 9.1). This tells us that members' household food consumption is better than non-members'. In other words RUSACCOs play an important role in supporting the food security of the rural poor.

Table 9. 1: Problem of Feeding the Family

Item	Total	Member	Non -ember	Total	Member	Non-Member
No problem	293	154	139	78.13	82.35	73.94
less than or equal to 3month	64	27	37	17.07	14.44	19.68
>3mnths	18	6	12	4.80	3.21	6.38

Moreover in group discussion, participants acknowledged the RUSACCOs' impact on members' food security.

A board member of Gojam Ber RUSACCO, (age 42, male) said that:

> *"there were people, who could not even satisfy their hunger every day, but now, thanks to the RUSACCO, they have become involved in petty trade and other income generating activities and no longer need others' help."*

During group discussion at Addis Alem RUSACCO, a female member, aged 55 said that,

"for five years I sent my daughter to my relative in Addis Ababa, because I can't feed her. However, my relative didn't keep her promise and my daughter suffered a lot. Last year, my daughter returned back home and I borrowed 1,000 Birr from Addis Alem and opened a small shop. Thanks to the almighty God with love we eat something and sustain our lives."

Another woman member of Edget Ber RUSACCO, aged 65 stated that,

"my husband passed away in 1999. Since 1999 until joining the RUSACCO I was not able to feed myself and three children even once a day. I was totally dependent on food aid. Now my life has totally changed and I can feed my children at least twice a day and can even cover other important expenditure of my family."

According to the accountant of Edget Ber RUSACCO, female, age 35,

"the RUSACCO has contributed to a decrease in food insecurity in society. Some of the members of the RUSACCOs graduate from food insecurity (productive safety net program[18]). People who were not able to feed their children recently have become capable of feeding their children and even able to lend to the other members of the community."

From the above mentioned responses, one can generalize that RUSACCO improves members' food security in particular and their livelihood in general.

9.4 Econometric Model Specification

9.4.1 Propensity Score Matching (PSM)

Propensity score matching (PSM) is a non-parametric method that is widely used in the impact evaluation of different interventions (Heckman et al 1998; Cobb-Clark & Crossley 2003; Ravallion 2005). According to Haiyan (2011, p.83), "propensity score matching (PSM) is a technique to balance propensity scores of the treatment and comparison groups so that direct

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[18] "A household has graduated when, in the absence of receiving PSNP transfers, it can meet its food needs for all 12 months and is able to withstand modest shocks." This state is described as being 'food sufficient'. (PSNP 2007)

comparisons of the observational data are more meaningful with the groups balanced on the covariate. Propensity score is a conditional probability of receiving the treatment, given the covariates; in other words, propensity score is a probability of a unit (e.g. farmer) being assigned to a particular condition in a rural cooperatives, given a set of known covariates (e.g. gender, educational level, family size, and other relevant covariates)."

Trujillo et al (2005) explained the two basic benefits of PSM: first, by matching the control and treatment groups on a set of observed characteristics it helps to reduce systematic differences between them; second, without explicitly accounting for the relationship between the individual characteristics and the outcome of interest it allows one to estimate the effect of a program. But it is well suited to adopt PSM in a setting where both treatment and control groups come from the same economic and demographic environment (Jalan & Ravallion, 2003).

The research setting the propensity score p(x), is defined as the probability that a given household would join in a RUSACCO, given a set of observable characteristics, x. The basic assumption is that, conditional on the propensity score, members and non-members of the RUSACCOs become comparable. It is within the same *Kebele* that I have a better identification of the covariates since residents in these selected *Kebele* were all given the opportunity to determine RUSACCO membership. It was hypothesized that RUSACCOs have an impact on members' food security. Propensity score matching was used to analyze the impact of RUSACCOs on rural poor food security. The proxies for measuring food security in this study were households' annual consumption and food expenditures.

More recent research uses consumption and income as dependent variables for the measurement of microfinance impact (Tenaw & Islam 2009; Li & Eli 2010). However, in less-developed countries like Ethiopia, consumption rather than income is viewed as the preferred welfare indicator because consumption better captures the long-run welfare level than current income. For instance, in MoFED (2006) consumption may better reflect households' ability to meet basic needs. Consumption reflects the ability of households to access credit and saving at times when

their income is very low[19]. Hence, consumption reflects the actual standard of living (welfare). According to MOFED (2012), consumption can be measured better than income. Moreover, in most less-developed countries, the income report of households is likely to be understated compared to consumption expenditure report. Especially for rural people, income is irregular and seasonal and it may be very difficult for respondents to recall.

According to Falguera et al (2012), the idea behind the propensity approach is to identify communities that are as alike as possible to each other with respect to the probability of receiving the 'membership' but highly unequal in terms of consumption expenditure and/or food expenditure. These potentially 'exchangeable' rural poor are matched on their propensity scores so that differences in their consumption expenditure or food expenditure outcomes can be compared.

According to Haiyan (2011, p.84), "there are four basic steps in using PSM: (a) identifying and measuring covariates X_i based on previous research and theory related to the causal variables, (b) estimating propensity scores $p(X_i)$ using a logistic regression of T_i on X_i, (c) matching each of the cases in the treatment group with one or more in the comparison group based on the propensity score $p(X_i)$, and (d) conducting the intended analysis after matching on propensity scores or with adjustment based on propensity scores."

Let M_i denotes a dummy variable such that $M_i=1$ if the ith individual is a member of a RUSACCO and $M_i=0$ otherwise. Similarly let Y_{1i} and Y_{0i} represent potential food security outcomes for members and non-members respectively. Then $\Delta = Y_{1i} - Y_{0i}$ is the impact of the RUSACCO membership on the ith individual, usually called treatment effect. As we observe $Y_i = M_i Y_{1i} + (1-M_i) Y_{0i}$ rather than Y_{1i} and Y_{0i} for the same individual, we are unable to compute the treatment effect for every unit. The most important treatment effect of interest that can be estimated is therefore the Average impact of Treatment on the Treated (ATT) given by

$$ATT = E (Y_{1i} - Y_{0i} / M_i = 1) \qquad\qquad (1)$$

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[19]*http://www.MoFED.gov.et/English/Resources/Documents/Interim%20Report%20on%202010-11%20Poverty%20Analysis.pdf /*05/01/2014

Following Rosenbaum & Rubin (1983), the propensity score can be estimated as

$$P(X) = P(M_i = 1/X) \qquad (2)$$

Given the assumptions that

$Y_{1i}, Y_0 \perp M/X$ i.e., the potential outcomes are independent of RUSACCO membership given X, this imply $E(Y_{0i}/M = 1, P(X)) = E(Y_{0i}/M = 0, P(X))$ and

$0 < P(X) < 1$, i.e., for all X there is a positive probability of either RUSACCO member (M=1) or non-member (M=0), this guarantees every adopter a counterpart in the non-member population,

The ATT can then be estimated as

$$ATT = E(Y_{1i} - Y_{0i}/M_i = 1) \qquad (3)$$

$$= E[E(Y_{1i} - Y_{0i}/M_i = 1, P(X))]$$

$$= E[E(Y_{1i}/M_i = 1, P(X)) - E(Y_{0i}/M_i = 0, P(X))]$$

The propensity score is a continuous variable and there is no way to have members with the same score as its counterfactual(s). Therefore, estimation of the propensity score is not sufficient to compute the average treatment effect given by equation (3). I need to search for counterfactual(s) that match(es) with each non-member depending on its propensity score. The central part of PSM is matching. Understanding PSM and selecting an effective matching technique is the key to applying PSM in research studies.

9.4.2 Matching Methods

The technique of matching, as the name suggests, involves choosing a group of controls such that members of this group have X values which "match" those of the n1 treatments according to some reasonable criterion. According to Haiyan (2011, p.84), "matching is a procedure to pair treatment and comparison groups with similar observable characteristics in order to reduce the estimation bias from the influence of unbalanced covariates. There exist a variety of matching approaches to balance the distributions of covariates between the treatment conditions to reduce the selection bias."

There are several matching algorithms but no clear explanation to show which matching method is better (Liu & Trefler, 2011). Asymptotically, all matching algorithms should yield the same results. In spite of this theory, in practice, there are tradeoffs in terms of bias and efficiency involved with each algorithm (Caliendo & Kopeinig, 2008). They suggest trying a number of approaches; therefore, I implement four matching algorithms, namely nearest neighbour matching, caliper matching, radius matching, and Kernel matching (Heckman, et al 1998; Mensah, et al 2010).

Nearest neighbour matching According to Rosenbaum & Rubin (1985) this method finds for each participant i, non-participant j with the closest propensity score. Based on this concept, the relevant neighbourhood is defined by the following expression which matches each treated case (a rural poor in the member group) with a non-treated case (a rural poor in the control group in a non-member group) with the closest absolute distance of their propensity scores;

$$c(p_i) = \{ j \left| \min_j \left\| p_i - p_j \right\| \right. \}$$

According to Smith & Todd (2005), this formula can be used for both matching with or without replacement. Generally there is a trade-off between bias and variance, for instance, replacement technique improves the quality of matches on average while increasing the variance of the impact estimator (Essama, 2006). Matching with replacement creates the possibility of matching a given non-members to more than one member.

Caliper matching method; this method matches each treated case with a non-treated case within a pre-specified band, called a caliper; this method selects the nearest neighbour within a caliper of width δ (Cochran & Rubin 1973). According to Essama-Nash (2006) the approach imposes a tolerance level on the distance between the propensity score of participant i and that of non-participant j. Therefore one can calculate the corresponding neighbourhood using the following formula;

$$c(p_i) = \{ j \left| \delta \right| > \left\| p_i - p_j \right\| = \min_j \left\| p_i - p_j \right\| \}$$

If there is no member of the untreated, i.e. non-member group within the caliper for the treated (member) unit i, then the treated unit is left unmatched and dropped from the analysis. Thus, according to Essama-Nash (2006) caliper is a way of imposing the common support restriction.

Radius matching: According to Essama–Nssama (2006, p.12), "In radius matching an estimate of the counterfactual is based on the outcomes of all members of the comparison group within radius r, rather than the outcomes of the nearest neighbors within the radius (as in the case of caliper matching)." The corresponding neighborhood is:

$$c(p_i) = \{j | r > \| p_i - p_j \| \}$$

We can write the nearest neighbor mean impact estimator as follows:

$$\theta_{NN} = \frac{1}{n_t} \sum_{i \in T} (y_i - y_j)$$

Where n_t is the total number of treated (member) units.

Kernel matching: According to Essama–Nssama (2006, p.14), "the idea behind kernel-based matching as stated by is to associate the outcome of participant i with a matched outcome computed as a kernel-weighted average of the outcomes of all non-participants. Assume the weight assigned to non-participant j is in proportion to how close he is to participant i." Therefore, these weights can be calculated as follows:

$$w_{ij} = \frac{K\left(\dfrac{p_i - p_j}{h}\right)}{\displaystyle\sum_{j \in \{d=0\}} K\left(\dfrac{p_i - p_j}{h}\right)}, \text{ where h stands for the bandwidth}$$

According to Abebe (2011, p.52), "after matching, there should be no systematic differences in the distribution of covariates between both groups." However, according to Bernard et al (2008, p.429), "since x may only capture a household's observable characteristics despite the fact that less directly observable factors may be influencing the household's decision to join a cooperative (e.g., the household's social capital stock), the distribution of unobservable characteristics may systematically differ between members and non-members, which will lead to a biased estimate of

the impact of RUSACCO." Such kind of bias usually occurred in particular member created RUSACCOs. Fortunately, in this study, all sampled RUSACCOs were initiated by outsiders: 60% of sample RUSACCOs by the regional government and the rest 40 % by non-governmental institutions. This condition can minimise the problem of self-selection bias.

In studies on cooperatives and rural development, the application of these techniques includes, for example, the co-operative and its impact on people's well-being and community development (De Muro, 2012), cooperatives' impact on members' commercialization (Bernard et al 2008; Francesconi & Heerink 2011), impact assessments of farmers field schools (Gotland et al, 2004) and community-driven development (Rao & Ibanez, 2003).

Finally, according to Johar (2009), matching and balancing can eliminate biases due to the non overlapping support and difference in the propensity score distribution of the treatment and control households. However, members of RUSACCO may be sensitive to "hidden bias" due to pre-existing unobserved characteristics that influence both membership status and its expected outcomes, even if this approach achieves a balance between members and their matched counterparts in terms of pre-existing observed characteristics. The sensitivity analysis developed by Rosenbaum (2002) addresses the strength of such an unobserved variable to evaluate the causal effects estimated from propensity score matching. Therefore, I can examine the strength of selection bias due to the unobserved covariate required to alter the causal inference about the impacts of RUSACCO on members' food security by comparing the magnitude of hidden bias with that of the known observed covariates.

9.4.3 Estimation of Results and Discussion

The purpose of establishment of the RUSACCOs is to improve the livelihood of the society. Consumption expenditure and food expenditure are among the money metric measurements of food security. Before undertaking PSM, let us see the mean difference between member and non-member group as per outcome variables.

9.4.3.1 Consumption expenditure and food expenditure impact at household level

As could be seen from the separation test (table 9.2), the difference in consumption expenditure between members and non-members is significant at 1% level of significance. The result showed

that the average annual consumption expenditure of members (456.58 euro) was higher than non-members' average annual consumption expenditure (365.58 euro).

Table 9. 2: Average Annual Consumption Expenditure of Households

Membership	Number of Respondents	Mean annual Consumption Expenditure	Standard error	P
Member	259	456.58	11.57	
Non-member	253	365.58	11.70	
Combined	512	411.71	8.46	5.51***

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

Accordingly (table 9.3), there was a highly significant difference in average food expenditure between members 320.79 euro and non-members 252.78 euro. This implies that members of RUSACCOs have higher food expenditure than non-members.

Table 9. 3: Average Annual Food Expenditure of Households

Membership	Number of Respondents	Mean annual Food Expenditure in euro	Standard error	P
Member	259	320.79	8.42	
Non-member	253	252.78	8.11	
Combined	512	287.22	6.03	5.81***

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

The mean comparison statistics indicate that members are better-off in terms of consumption and food expenditure, but this doesn't imply that the difference is solely due to membership of a RUSACCO. Other factors (both observable and unobservable) might have contributed to the consumption and food expenditure difference between members and non-members.

9.4.3.2 Propensity score estimations

The first stage in propensity score matching is to model the probability of being a member of a RUSACCO. With that purpose, variables that influence the likelihood of membership in a RUSACCO were included. According to Setboonsarng & Parpiev (2008, p.12), "variables that affect neither treatment nor the outcome are clearly unimportant. Only those variables that influence both the treatment and the outcome are needed for the matching and included in the probit model from which we derive the propensity score."

Table 9.4 shows the propensity score estimations by logit regression method. In general, the model is well specified with high likelihood and chi square coefficient.

Table 9.4: Logit Model to Predict the Probability of Membership

Logistic regression				Number of obs	= 500	
				LR Chi2 (14)	= 112.36	
				Prob > chi2	= 0.0000	
Log likelihood = -290.20				Pseudo R2	= .1622	
Membership	Coef	Std. Err.	z	P>/z/	[95% Conf. Interval]	
Time	0.046	0.205	0.23	0.822	-0.356	0.449
Sex	1.125	0.234	4.81***	0.000	0.666	1.584
Age	-0.007	0.016	-0.43	0.670	-0.038	0.024
Occupation	-1.020	0.351	-2.90***	0.004	-1.708	-0.332
Maritalstatus	0.685	0.392	1.75*	0.081	-0.084	1.454
Familsz	-0.046	0.069	-0.66	0.511	-0.182	0.090
Educlvl	0.756	0.317	2.38**	0.017	0.135	1.377
Farmexp	0.007	0.015	0.46	0.646	-0.023	0.037
Sizland	-0.199	0.201	-0.99	0.322	-0.594	0.195
Livestock	0.266	0.060	4.46***	0.000	0.149	0.383
Distfromsac	-0.005	0.004	-1.22	0.223	-0.013	0.003
Participation in other FI	-0.346	0.261	-1.33	0.184	-0.857	0.165
Particplcld	1.136	0.229	4.96***	0.000	0.687	1.585
Participothrincm	0.807	0.229	3.52***	0.000	0.358	1.256
Constsant	-1.496	0.729	-2.05**	0.040	-2.925	-0.067

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

The logit estimations show the relatively good fit of the model, expressed by chi-squared and pseudo r squared statistics. Among the covariates, sex, primary occupation, marital status,

educational level, livestock, participation of local leadership and participation in other activities affect participation in RUSACCO.

According to Setboonsarng & Parpiev (2008, p.13), "after deriving the propensity score we need to ensure whether there is enough common support. This is done by discarding treated individuals with a propensity score lying outside the range of propensity scores for individuals in the control group."

Table 9.5: Description of the Estimated Propensity Score in Region of Common Support

```
        Percentiles      Smallest
  1%      .1727052       .1632138
  5%      .1979051       .1664202
 10%      .2415281       .1683308      Obs                   484
 25%      .3446222       .1718868      Sum of Wgt.           484

 50%      .5135323                     Mean              .5256141
                         Largest       Std. Dev.         .2139753
 75%      .6946864       .957237
 90%       .823242       .9701779      Variance          .0457854
 95%      .8693206       .971689       Skewness          .1651642
 99%      .9566279       .9955635      Kurtosis         1.966774
```

The final number of blocks is 6. These six blocks ensures that the mean propensity score is not different for treated and controls in each block. The common support region is between 0.1632 and 0.9956. The balancing property is also satisfied. The table below shows the inferior-bound, the number of treated (members), and the number of controls (non-members) for each block.

Table 9. 6: Distribution of Members and Non-members Based on the Propensity Score

Inferior of block of pscore	russaco membership non membe	member	Total
.1632138	22	4	26
.2	92	45	137
.4	66	72	138
.6	25	40	65
.7	11	43	54
.8	11	53	64
Total	227	257	484

Note: the common support option has been selected

From table 9.6, one can see that the distribution of members and non-members along the propensity score is different. There is some overlap between members and non-members when the propensity score is between 0.2 and 0.4, which shows that the two groups share the same characteristics in these brackets, but there is little overlap in the lower propensity score brackets. A lower propensity score basically means a lower probability of membership of a RUSACCO.

As noted previously, the treatment group (members) generally had higher mean values of the outcomes (i.e. total consumption and food expenditure) as compared to the control group (non-members). To test the robustness of the results, analysis using a different matching algorithm, addressing the issue of independence of observations, and assessing whether simultaneity presents a severe bias in our average treatment effect estimates was carried out.

9.4.3.3 Matching results of household consumption expenditure

Out of 512 observations, only about 197 are comparable in the radius matching estimator, although more are comparable on other estimators. Table 9.7 presents the matching estimates of the average treatment effect of membership on the treated (ATT) for the household consumption expenditure. The estimated average treatment effect for the treated (ATT) is positive in all the cases. The matching estimates, using various algorithms, show there is a significant effect on household food security by joining a RUSACCO. Based on the alternative matching methods adopted for assessing the robustness of the estimated results, the overall average consumption expenditure increase due to membership ranged from 34.21 to 62.765 euro and was significant at the 10% level of significance based on nearest matching, kernel, calliper and radius matching

methods. This robust result indicates that (relying on selection observables and assuming no selection bias), the mean households' consumption expenditure has significantly increased due to joining a RUSACCO.

Table 9. 7: Matching Methods and Consumption Expenditure in Euro

Matching Methods	Number of treated (member) group	Number of control (non-member) group	ATT	Standard error	t- statistics
Nearest Neighbor Matching	257	110	34.212	18.970	1.803*
Kernel	257	227	50.429	22.978	2.195**
Caliper (0.001)	81	243	62.765	31.596	1.99**
Radius Matching (0.001)	99	107	57.161	31.334	1.824*

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

9.4.3.4 Matching results of household food expenditure

The second outcome indicator is the RUSACCO improves the household food expenditure. Table 9.8 presents the matching estimate of the ATT for the food expenditure of the household. The overall average annual food expenditure gain due to joining RUSACCO ranged from 28.46 to 43.98 euro and was significant at 10% level of significance based on the nearest neighbor, kernel, caliper and radius matching methods (refer table 9.8).

Table 9. 8: Matching Methods and Food Expenditure in Euro

Matching Methods	Number of treated(member) group	Number of control (non-member) group	ATT	Standard error	t-statistics
Nearest Neighbor Matching	257	110	28.464	14.233	2.000**
Kernel	257	227	39.573	17.076	2.317**
Caliper (0.001)	81	243	43.981	21.985	2.00**
Radius Matching (0.001)	99	107	41.601	21.300	1.953*

* = Coefficient significant at 10% ** = Coefficient significant at 5% *** = Coefficient significant at 1%

These robust methods confirm that the RUSACCO has a positive impact on member households' food security. The result of the study is very interesting because in various matching methods I find similar results. Observable characteristics biasedness was tested and there was no biasedness due to observable characteristic (see appendix table 9.10). However, there is a risk that these estimates are biased due to unobservable characteristic. Sensitivity analysis was conducted using Rosenbaum sensitivity analysis on the two outcome variables presented in see appendix table (9.11) and table (9.12). The evidence provided by those tests the impact estimates after some level are sensitive to selection on unobservable. Such conditions usually occur in such kind of situations that one can't avoid hidden bias. Yet from qualitative observation and discussion with groups and key informants, I can conclude that RUSACCOs have a positive impact on rural households' food security.

9.5 Summary and Conclusion

It has been revealed that, even if RUSACCOs are in their infancy stage, they play a vital role in member households' food security from both qualitative and quantitative perspectives. The majority of the participants believe in the positive role of RUSACCOs in enhancing food security in particular and livelihood in general. Some members increased the number of meals (from once a day to three times a day) and the quality of food (some households' feed animal

products) after joining a RUSACCO. A RUSACCO promotes member entrepreneurial skills, therefore, they participate in new activities that help them increase their income and secure food throughout the year. Moreover, it helps farmers not to sell their agricultural product at a low price on the one hand and non-farming members to purchase cereals during peak season that can able to feed the family throughout the year.

The 97% of members believe the RUSACCO helps them to improve their food security and 70% of non-members agreed that RUSACCOs improves its member well-being. In this study annual household total consumption expenditure and food expenditure are used as food security indicators. Membership is positively correlated with both indicators and significant at 99% level of confidence interval. The ATT result also confirm that membership has a significant and positive impact on households food security. The overall average consumption expenditure of members is more than non-members in the range from 34.21 to 62.765 euro. The average annual food expenditure gain due to joining RUSACCO ranged from 28.46 to 43.98 euro.

From these findings, one can conclude that RUSACCOs play a positive role towards alleviating rural households' food insecurity problem in the study area

CHAPTER TEN

SUMMARY DISCUSSION AND CONCLUSION

10.1. Introduction

This chapter gives the reader the summary, conclusions, implication of the study and limitations of the research work based on research findings and analysis done. It also reviews briefly the background information of the study, study objectives, and conceptual framework.

10.2 Summary and Conclusion

In line with strong theoretical and empirical evidence attesting to the benefits of RUSACCOs, the Ethiopian government also believes that RUSACCOs can play a significant role in mitigating food insecurity in the country. Accordingly, the government has tried to establish and strengthen RUSACCO since 2003. Nevertheless, there has not been adequate research on the contribution of RUSACCOs to member households' food security. This research was intended to fill the gap in this regard.

The specific objectives of this research are to analyze the socio-economic and demographic profile of members and non-members, to identify the socio-economic and demographic factors that affect members' participation in terms of decision making, savings and credit and finally to assess the impact of RUSACCOs on households' food security. By conducting a thorough and critical review of the literature on the subject, the study also aimed at elaborating the links between RUSACCO and households' food security. Moreover, the three specific objectives of this research work are interrelated.

The data for the study were collected from various sources both primary and secondary. Primary data were collected from selected primary level RUSACCOs' members, non-members, RUSACCO board members, RUSACCO employees, *woredas'* cooperative promotion offices and regional level cooperative promotion office through key informant interviews, focus group discussions, questionnaires, and observation. Secondary information was gathered from documentary sources in the form of reports and a review of literature from various sources. Both qualitative and quantitative analytical approaches were applied in the study. Sections below provide brief summaries of the findings and conclusions of this study.

10.2.1 Membership in RUSACCO

According to the findings of the study, the attitudes of the rural poor towards RUSACCOs are positive. The main reasons members join a RUSACCO were; to get saving and credit services at fair interest rate, more accessible than other form of formal and semi-formal financial institution and to liberate from group lending risk. In addition, some members expressed a strong sense of ownership towards the RUSACCOs. However, lack of information about the benefits and principles of cooperatives were the major bottleneck for RUSACCO expansion in the study areas.

In the study areas, the major socioeconomic and demographic factors that motivate some to join and others not to join are; gender, household head occupation, marital status, educational level, livestock size, participation in local leadership, and participation in other income generation activities. According to the findings, the probability of female-headed households to become a member of RUSACCO was higher than male-headed households. The likelihood of households who participated in non-farm occupations to join RUSACCOs was more than households whose main income source was farming. 'Married' households' probability of joining RUSACCOs was higher than non-married households. Literate household heads' probability of joining RUSACCO was higher than illiterate household heads. Household assets increase the probability of being a member of the RUSACCO. The probability of local leaders being a member of RUSACCO was higher than other ordinary rural residents. Households involved in additional income generation activities' probability of joining a RUSACCO was higher than those who were not involved in additional income generation activities.

10.2.2 Participation of Members

It should be known that in as much as establishment or membership of RUSACCO is vital to addressing rural food insecurity, active participation of members is indispensable if such cooperative forms of business organisations achieve their objectives. Member participation may be in economical activities and/ or RUSACCO administration.

Members' participation in decision making includes attending the general assembly and/or as a board member or other committee member. The cooperative is a unique institution characterised by one man one vote principle thereby ensuring that the voice of each member is equal especially

in general assembly. In this regard, in the study areas, the majority of the participants attend the general assembly meeting. However, the participation of women in providing or sharing their ideas was very limited perhaps because of cultural influence. Most of the members are willing to participate in different committees. The few members who were not willing to be a member of committee felt that it was because they were illiterate and they believe that to be a member of committee one must be literate.

Cooperative training is very useful for co-operators. Members should know the principles of cooperatives, the benefit of saving, the proper utilization of borrowed fund and other similar issues. In the study areas, the regional cooperative promotion agency and NGOs have played a significant role in providing training and funding the training costs respectively. In the study areas, all management committee members have received training from the cooperative promotion agency. However, there was no formal training for ordinary members. However, management committees have tried to educate the rest of the members and others during cooperative meetings and/or other public gatherings. The performance of RUSACCOs in member training is very weak.

The payment of a dividend is an incentive for active economic participation of members. Especially in the Ethiopian case, it has an additional advantage because the past bad history of cooperative degrades the confidence of rural poor. Thus, it helps the rural poor to develop a sense of ownership and confidence in their RUSACCO. In the study areas, the majority of members received a dividend, but it was very small.

The two basic economic activities of RUSACCOs in rural Ethiopia are members' saving and borrowing. The majority of RUSACCOs in the study areas are collecting saving once in a month. Most RUSACCO activities are run by elected members who have no additional incentive. The amount of saving is very small. That is why in group discussion, some non-member participants lacked interest in joining the RUSACCO. Members' saving was determined by a number of socioeconomic and demographic factors. In the study, the major factors that affect members' saving are; household-head main occupation, farming experience and annual income.

The study indicated that there is a positive relationship between household income and saving in RUSACCO. Average households' who raised the majority of their income from non-farming

occupations, saved more than households involved in farming activities. Farming experience was negatively related with the amount of saving in the study area, where all other factors were kept constant.

Members' borrowing is another basic activity of the RUSACCO. Loans are provided for different purposes. The interest rate compared with other financial institutions is very small at between 8-10%. One interesting issue in RUSACCO credit in the study area is there was no default, that is, 100% repayment rate. Similarly members' borrowing was affected by different socioeconomic and demographic factors. In the study, the factors that significantly influence members' borrowing among hypothesized variables are; member age, household head main occupation, farming experience, consumption expenditure, date of membership, amount of saving and participation in other income generation activities.

The findings of the study revealed that the younger the member the more the amount of borrowing. Members involved in farming activity demand credit relatively less than members involved in non-farming activities. Households with high consumption expenditure borrowed more from RUSACCOs compared with households with less annual consumption expenditure. The demand for credit increases as the length of membership in a RUSACCO increases in the study area. Households involved in other income generation activities demand more credit than those who operated in single activity.

10.2.3 Impact of RUSACCOs on Member Households' Food Security

Households participate in RUSACCOs is likely to improve their livelihood. Especially in countries like Ethiopia, where famine vulnerability is high, food security is the focal point in national development priorities. Cooperatives are expected to play a central role in mitigating the problem of food insecurity of the destitute rural population. Therefore, every intervention should be tested against this basic goal of the country.

This study examined the impact of RUSACCOs on member households' food security. It has been revealed that, even if RUSACCOs are at their infant stage, they play a vital role in member households' food security from both qualitative and quantitative perspectives. The majority of the participants believe in the positive role of RUSACCOs towards food security in particular and livelihoods in general. Some members increased the quantity of meals from once a day to

three times a day and the quality of food whereby some households' were able to feed themselves with animal products like milk, meat and other nutritionally rich foods after joining a RUSACCO. The RUSACCO promotes member entrepreneurial skills, therefore, they participate in new activities that help them increase their income and secure food throughout the year. Moreover, it helps farmers not to sell their agricultural product at a low price on the one hand and non-farming members to purchase their annual food consumption during peak season and smooth their consumption throughout the year on the other hand.

The 97% of members believe the RUSACCO helps them to improve their food security and 70% of non-members agreed that the RUSACCO improves its member well-being. In this study annual household total consumption expenditure and food expenditure are used as food security indicators. Membership is positively correlated with both indicators and significant at 99% level of confidence interval. The ATT result also confirms that membership has a significant and positive impact on households' food security. The overall average consumption expenditure of members is more than non-members in the range from 34.21 to 62.765 euro. The average annual food expenditure gain due to joining a RUSACCO ranged from 28.46 to 43.98 euro.

10.3 Implication of the Study

This study contributes to our understanding of the role of RUSACCOs in developing countries, especially by clarifying the relationship between RUSACCOs and household food security. The study contributes to knowledge in the determinants of RUSACCO membership, determinants of member participation in different activities of RUSACCOs and the contribution of RUSACCOs towards alleviation of rural households' food insecurity problem.

To the best knowledge of the researcher, this study is the first empirical investigation in the Amhara region of Ethiopia which examined the impact of RUSACCOs on member households' food security. The study addressed such important questions as to why RUSACCOs were founded in rural Amhara in the first place. It also dealt with the reasons for some poor households opt to join a RUSACCO while others refrain from doing so. Additionally, it looked into the different socio-economic and demographic factors which potentially influence households' membership decisions. Finally, it examined impact of RUSACCO on member households' food security.

The study developed a conceptual framework that links RUSACCOs with household food security. This is arguably the first and unique way of conceptualizing the contribution of RUSACCO on member household food security. This theoretical framework provides the explanation for the interaction that exists among macroeconomic policy, household risk bearing capacity; access to RUSACCOs, participation of members and the improvement of household food security.

This study narrows the knowledge gap by examining appropriate methodology that can fit in the context of rural Ethiopia. The study began by reviewing the range of other researchers' methods. The majority of earlier research focused on either qualitative or fully quantitative issues. However, both methods alone have their own drawbacks. Most of the previous quantitative research did not control for the effect of other variables on the outcome variable. For instance, they simply describe the change in members' income before and after joining a cooperative and/or the difference in certain outcome variables between members and non-members, without controlling other factors that can affect those outcome variables. On the other hand, in this research work I chose a mixed method, i.e. qualitative and quantitative methods, through an organized and rigorous system of data collection to answer the research questions. Moreover, this research used appropriate quantitative methods that can control the effect of other socio-economic and demographic factors on outcome variables.

In this study, new socio-economic and demographic variables that affect RUSACCO membership and participation in various activities of RUSACCO were identified. This shows that this research makes a clear contribution to the literature by introducing new variables that determines decision making of the rural poor in RUSACCOs. Another contribution to existing knowledge is evidence of the impact of RUSACCOs on food security. In this research, households' food security was measured by using two outcome variables, that is, households' total consumption expenditure and food expenditure. Up to the researcher knowledge there was no any previous research work, especially on the food security contribution of RUSACCO, which utilized those mentioned outcome indicator variables.

In addition, the findings of the research revealed RUSACCOs' positive contribution towards member households' well-being. Both members and non-members acknowledged the positive impact of RUSACCO on member households' welfare. However, the average number of

members in RUSACCOs is very small. The finding in this regard is inconclusive. It is therefore suggested that further research is carried out to investigate the underlying reasons behind low number of membership.

In conclusion, this research has touched upon three core issues in the microeconomics of rural finance to rural households of developing countries, i.e., the profile of RUSACCO membership, determinants' of members' participation in different activities of RUSACCO, and food security impact of RUSACCO.

Based on the findings of the study, the following policy implications are suggested so as to be considered in the future intervention strategies which are aimed at the promotion of RUSACCOs:

1. Public awareness creation and training

On the one hand, with less than 20% the number of members of RUSACCO is very small compared with the total population of RUSACCO's operational area. On the other hand, the finding of the study shows RUSACCOs can improve the problem of food insecurity in rural Amhara. Therefore, RUSACCOs should broaden their outreach or expand the financial base of activity into a larger membership. Large membership means a wider base for savings mobilization as well as a broader range for its loan clientele, thus gaining economies of scale and scope in its operations as well as a more diversified portfolio at the local level. In this regard awareness creation is vital for attaining a more economical size. Training can help to clean the past bad image of rural cooperatives. Moreover, due to low levels of education in rural Ethiopia, the level of understanding about saving and other financial services of formal and semi-formal financial institutions are very limited. Training will enhance the level of understanding about the importance of saving and credit cooperatives.

2. Developing a special financial product that fit to the condition of farmers

The study also indicated that occupation is one of the basic factor that affect membership and also members participation. The rural poor who were involved in non-agricultural activities are more likely to join a RUSACCO and participate more in borrowing activities than those involved in farming activities. Since the majority of the rural populations are poor farmers, RUSACCOs

should design a system that can promote farmers to join the RUSACCO. For instance, the system of collecting deposit that suit farmers' real condition and credit supply that can satisfy the farming population demand. Moreover, to strengthen the RUSACCOs' financial capacity, government of Ethiopia and other rural development partners should channel credit through RUSACCOs provided that appropriate training is given together with additional financial resource.

In addition in the study area, the day to day activities of RUSACCO run by elected members. RUSACCOs as financial institution they need due care, so they should be managed by professional staff. However, hiring professionals demands adequate financial backings. The membership numbers of members are very small and their monthly saving was also meager. Regional cooperative promotion agency experts and other concerned bodies should further explore the causes of lower levels of membership and amounts of saving, so they design proper methodologies to promote savings and acquire new members. That will help them to hire professional staff and manage their day to day activities professionally.

3. RUSACCOs site

According to this study, especially in food secure Dejen *woreda*, distance is one of the important factors that limit member participation in different activities of RUSACCO. Therefore, the site of RUSACCOs office should be close to their members' residence. If the RUSACCO operational area is large, they should open branch offices to better serve better their members and recruit additional new members.

4. Promoting the participation of women

The research indicates RUSACCOs serve more women. Women in Ethiopia constitute half of the total population, but their participation in different economic and political issues is very limited. RUSACCOs can empower women by enhancing the saving culture and making loans available for different income generation activities which can help to increase the income and assets of women. This implies that organisations which involve empowering poor women can easily reach and solve their problem through RUSACCOs more effectively. In other words, rural poor development partners can serve the marginalised part of the rural population through rural saving and credit cooperatives. For example, if they want to train rural women or to provide financial resources and to make their livelihood sustainable, RUSACCOs are an appropriate channel.

Though the number of women members in RUSACCO is significant, their participation in managerial positions is very limited. The involvement of women in decision making is important. RUSACCOs and concerned bodies should promote the participation of women in RUSACCO management.

5. Improving the financial condition of RUSACCOs

Because of the vital role of the RUSACCOs in food security, the financial condition of RUSACCOs should be healthy. Members' saving is usually considered as a liability of a RUSACCO. On the other hand, shares are considered as RUSACCOs capital. Though saving mobilization is one merit of financial institutions, proper debt equity ratios should be maintained for viable financial institutions. In most of the studied RUSACCOs, the amount of shares purchased by members was, by far, less than the amount of their deposit. Therefore, cooperative promotion agency facilitators should train the management of RUSACCOs to balance the debt and equity.

The financial resources of most RUSACCOS are very limited. So, government banks as well as private banks should consider RUSACCOs as their partner to reach the majority of the population in both saving and credit activities.

Vertical integration of cooperatives is one means of maximising benefit from economies of scale. In this regard, in the study area I observed the formation of Cooperatives Saving and Credit Unions which serve primary level saving and credit cooperatives and other types of cooperatives in their operational area. As a new arrangement, it demands thorough investigation about its pros and cons. From government cooperative promoters perspective it is considered as one important tool to efficiently utilize the limited financial resource of the region. However, it needs detail investigation.

RUSACCOs should broaden its services, for example providing insurance service to their members by partnering with insurance companies who are based in the urban centre through conscious negotiation). Therefore, concerned parties should consider the potential role of RUSACCOs in rural Ethiopia's insurance needs such as crop insurance and contribute towards rural households' food security.

6. Identifying appropriate collateral system

In the study areas members' borrowing guarantees given to their RUSACCO were only personal guarantees. This will limit the participation of members in borrowing activities and discourage non-members from joining a RUSACCO. In rural Ethiopia, the available options for loan guarantees are very limited; however, to attain members' food security, an appropriate loan guarantee system should be designed. For instance, farm land, housing and perennial crops should be considered as collateral to solve the basic obstacle.

7. Protecting the autonomy of RUSACCOs

In this study particularly in FGD, it was understood that the past negative Ethiopian cooperative history due to a high level of government intervention and lack of confidence in cooperatives has limited the number of members of RUSACCOs. Therefore, minimising the level of interference in RUSACCO operation is another important area that all concerned bodies should consider. \in addition, strong bylaws and guidelines would ensure protection of members and practical autonomy acceptable to governmental agencies. The RUSACCOs should effectively be seen as a private user-owned business organisation that is controlled by its members.

10.4 Limitations of the Study and Future Research

This study is the first study on the impact of RUSACCOs on member households' food security particularly in the Amhara National Regional State. The ANRS is very large. Therefore, as this is the first study on the subject, it is important to acknowledge some limitations. The first limitation is, due to the limited time and resources, the sample size were very small. Second RUSACCOs are relatively very young.

It is clear that from existing literature and the authors' own experience that the study incorporated different socio-economic factors that may affect the rural poor's decision to join a RUSACCO and their level of participation. However, there may be additional socio-economic and demographic factors that can affect membership and participation of members in different activities of the cooperative (such as; management decision, saving and credit). Therefore, future research should explore additional socio-economic and demographic factors that may affect membership and participation of rural poor.

Finally this research has attempted to maximise benefits from combining different methodologies. However, since there was no baseline data in the study area, the only option was to study the impact of RUSACCO in household food security by comparing the change in the livelihood condition of members with non-members under similar socio-economic and demographic conditions. In other words, this research was not a longitudinal study, so drawing conclusions about impact over time is difficult. Therefore, there is a clear need for further research along this line. Another useful area for further research is identification and measuring of impacts of RUSACCO on dimensions of household welfare other than food security.

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APPENDICES

Appendix 1: Household Survey Questionnaire

Date_____

Code No _____

Name of Respondent _____ *Woreda* _____

Kebele _____Village_____SACCO_____

Interviewer name _____

I.   Household Characteristics

1. Age of the respondent _____
2. Sex_____
3. Marital status _____
4. Religion _____
5. Main occupation _____
6. Level of education _____
7. How many persons in your household (those who live together with you and share the same food at least once a day) are_____
8. How many persons in your household are working engaged in work that earns income or products? _____
9. How many children in your household are school-aged (5-17 years of age)? _____
10. How many of these children currently attend school, full or part-time? _____
11. How many of these children have never attended school? _____
12. What is the highest grade level that any of your children has completed? _____

II. Farming Characteristics

1. Farming experience in full years (head of household's) _____ years.
2. Do you own land? Yes (1) No (0)

    2.1 If your answer is yes, size and use of land holding in 2010 crop year is:

        • Total cultivated land in 2010 crop year_____ Timid/Hectares

        • Own land _____ Timid

        • Rent in _____ Timid

        • Rent Out _____ Timid

    2.2 No of plots of land _____

    2.3 Type of crops cultivated during 2010cropping season in timad (ha)

      • Cereals [_____]

      • Pulses [_____]

      • Vegetables and fruits [_____]

3. Do you own Livestock? Yes /No

[_____]

3.1 How many livestock do you have?

Cattle   Goat and Sheep [   ]   Horse [   ]

Donkey [   ]   Mule [   ]   Chicken [   ]

4. Fertility status and soil character of the plots as perceived by the member farmer.

a) Good   b) Medium   c) Poor

5. Do you feel that your holding is sufficient to satisfy the following needs? (yes/no)

       a. Home consumption_____

       b. For purchasing other goods_____

6. If no, which of the following activities did you perform to raise your income?

a. Handicraft   b. Local drink sale   c. Trading   d. Food aid

e. Other (Specify)   e. Nothing

III.   Production, Income and Consumption

1. What is the most important source of income for your members? _____

2. Is that source of income growing? Yes/ No, why?

    _____

3. Crops

Major crops produced	Total production (Qts)	Value in Birr	Amount		
			Consumed	Sold	Stored
Teff					
Wheat					
Millet					
Sorghum					
Maize					
Peas					
Beans					
Vegetables					
Others					
Total					

Remark: production includes both rain fed and irrigation

4. Livestock Products

Type of production	Total owned	Value in Birr	Amount in number		
			Consumed	Sold	Saved
Oxen					
Cows					
Heifers					
Bulls					
Calves					

Donkey					
Horse					
Mule					
Goats					
Sheep					
Chicken					
Milk					
Butter					
Eggs					
Honey					
Others					
Total					

a. Income from off -farm activities (specify) in Birr_____

b. Other source of income (specify) in Birr_____

c. Total income in Birr _____

5. Indicate the amount of money spent in for the following during in the production year.

Item	Birr
▪ Production cost (annually)	
▪ Consumption expenditure	
▪ Food	
▪ Clothing	
▪ School	
▪ Medication	
▪ Social contribution	
▪ Social ceremonies	
▪ Recreation	
▪ Others (specify)	
▪ S/total	
▪ Total Expenditure	

i. During the last 12 months, has your household's diet

a. Worsened   b. Stayed the same   c. Improved   d. Don't know

ii. (If worsened) How has it worsened?

_____

iii. (If improved) How has it improved?

   a. Able to buy more cereal staples such as maize, wheat, tef products

   b. Able to buy more vegetables, legumes, to eat with staples

   c. Able to buy more animal/dairy meat, milk, cheese, eggs

   d. Able to buy more convenience foods like pasta

   e. Able to buy more cooked foods

f. Able to eat better during the hungry season

g. Able to eat three meals in a day

h. Other (specify) _____

iv. During the last 12 months, was there ever a time when it was necessary for your household to eat less or eat less well either because of a lack of food or a lack of money to buy food?

v. If yes, how long did this period last? (Specify number of months)

vi. What did your household do to get through this difficult situation

    a. Borrowed money or food from family/friend

    b. Borrowed money or food at cost   c. Sold personal property

    d. Self or someone else in family got local employment

    e. Self or someone else in family left area to seek employment   f. Food aid

    g. Other (specify) _____

IV. Institutional Characteristics

1. The distance from extension agent (km) _____

2. Do you get extension service? 1) Yes 2) No

    i. If yes, for how long have you been getting the service? ____Years

    ii. Who provides the extension service? 1) Development agents 2) NGOs 3) Others, specify_

    iii. How frequently were you visited by development agents in the last 12 months? Days /months____

3. Proximity to Village/Town market (Km) _____

4. Distance from Farmers Multipurpose Cooperatives (Km)_____

6. Distance from SACCO (Km)_____

7. Distance from main road (Km) _____

8. Distance from health centre (Km)_____

9. Distance from the nearest school (Km)_____

10. Are you the member of farmer's multi service cooperatives? _____

11. Have you participated in the leadership of local associations?_____

12. If yes, in which ones? For how long?

_____

13. Are you the member of SACCO? _____

14. If yes,

    a. When did you join SACCO? _____

    b. What was your level of participation in the foundation of the SACCO? High / Low /Not at all

    c. How did you decide to become member of the cooperative society? Self interested / by government /by friends / others (specify) _____

    d. Are you happy being member of the cooperative society? Yes / No

    e. Are you a committee member in your SACCO?_____

f. Did you know the guideline of your SACCO? _____

g. What services of the SACCO do you use?

_____

h. Did you believe your SACCO contributes for household food security? _____

i. Explain briefly the benefits that you have got from SACCO

_____

_____

_____

j. How has your economic situation changed since you join SACCO?

_____

k. How does this compare with other people living in your area (not joining SACCO)?

_____

_____

l. Is there anything about the SACCO you would like to see improve? _____How?

_____

_____

15. If the answer for # 13 is no,

a. Why not you join SACCO? _____

b. Are you willing to join into SACCO? _____

c. Why? Or why not?

_____

_____

d. Do you feel that you benefit from the cooperative even though you are not a member?

_____

_____

16. What institutional problems have in your *Kebele* administration (lowest level of administration)? (rank)

a. Land tenure ⬜

b. Credit institution ⬜

c. Extension service ⬜

d. Transportation problem ⬜

e. Health service ⬜

f. Veterinary service ⬜

g. Educational service ⬜

h. Other specify

V.   Profile of Savings and Borrowings

Savings

1. With what persons or institutions have you **ever saved** money till now?

(please tick in 2nd column of the table below)

2. From what persons or institutions do you currently save money with?

(tick below)

3. Please give your overall assessment of the persons/institutions you have ever saved with?

  (indicate below)

Person/institution	Ever saved with(tick)	Currently saving with (tick)	Degree of satisfaction 1=Dissatisfied; 2=Neutral/mixed feelings no problem; 3=Satisfied
1. Relatives/friends			
2. Supplier			
3. Money lender			
4. ROSCA			
5. SACCO			
6. Commercial Bank Which ( )			
7. ACSI			
8. Another MFI			
9. Other (specify)			

4. Who/what is the person or institution you like **most** to save with?

_____

5. What exactly makes you prefer to save with this person/institution? (tick below)
    a.   The only alternative available nearby ☐
    b.   It is secure and reliable   ☐
    c.   It forces me to save/savings discipline ☐
    d.   Proximity   ☐
    e.   Money can be easily deposited   ☐
    f.   Money can be easily withdrawn   ☐
    g.   It gives me prestige   ☐
    h.   Able to get other services (   ) ☐
    i.   Good rate of return (interest rate)   ☐
    j.   Other

6. During the last 12 months, has your personal cash savings? (increased/ decreased/ no change) _____

7. Why? _____

Access to Credit

1. From what persons or institutions have you **ever borrowed** money?
(please tick in 2nd column of the table below)

2. From what persons or institutions do you currently have money borrowed from?
(tick below)

3. Please give your overall assessment of the persons/institutions you have ever borrowed
from? (indicate below)

Person/institution	Ever borrowed (tick)	Currently borrowing (tick)	Degree of satisfaction 1=Dissatisfied; 2=Neutral/mixed feelings -no problem; 3=Satisfied
1. Relatives/friends			
2. Supplier			
3. Money lender			
4. ROSCA			
5. SACCO			
6. ACSI			
7. NGO specify			
8. Commercial Bank which			
9. Other Specify			

4. Who/what is the person or institution you like **most** to borrow money from?_____

5. What exactly makes you prefer to borrow from this person/institution? (tick below)

    i. Proximity of lender/offices/officers   ☐

    ii. Fast processing of loan   ☐

    iii. Simple application procedures   ☐

    iv. Easy loan security system   ☐

    v. Loan size (appropriate to my needs)   ☐

    vi. No restrictions on loan use   ☐

    vii. Gender sensitivity   ☐

    viii. Repayment (term, instalment, grace period) is adjusted to my cash-flows   ☐

    ix. Interest rates   ☐

    x. Able to get other services   ☐

    xi. Repayment easily rescheduled or adjusted in case of misfortune   ☐

    xii. Other

6. Have you taken loan at least 100 Birr, in cash or in kind? yes/ no

Please give details about five major borrowings. Include those you have paid back, as well as

loans you have not paid back as yet.

Loan (1)	Source of loan (2)	Purpose of loan (3)	When did you took (mnth/yr) (4)	Amount in Birr		
				In cash amount in Birr (5)	The kind estimate in Birr (6)	Total amount in Birr (7)
1.						
2.						
3.						
4.						
5.						

Remark

Source of loan

1. Private money lender   2. Friend/ relative   3. Commercial bank   4. ACSI
5. SACCO   6. Farmers multipurpose cooperative   7. NGO   8. Other_____

Loan	Is there fixed repayment time (yes=1, no=2)	Did the loan involve interest payment? (yes=1, no=2)	Were you required (yes=1, no=2)		Date of repayment (mnth/yr)	Is any part of the loan still outstanding (yes=1, no=2)
			Collateral	Guarantor		
1.						
2.						
3.						
4.						
5.						

Purpose of loan

1. Agricultural inputs (seed, fertilizer,   )   2. Livestock   3. Off farm business
4. Food expense   5. Health expense   6. Education expense
7. Celebration (wedding, funeral,   )   8. Other specify_____

For SACCO members only

i. Is saving compulsory? Yes/ no
ii. How did you save with SACCO? (frequency)

_____

iii. Why? _____
iv. Did you borrow money from SACCO?_____
v. If yes, how did you invest the last loan you took from the SACCO? (tick below)

    a. Commerce/trade/retail (includes petty trade)   ☐
    b. Manufacturing (includes handcraft work)   ☐
    c. Service (restaurants, food stalls, cleaning services)   ☐
    d. Agriculture (includes food or other crop production, animal raising) ☐
    e. Other income generating activities (specify)   ☐

    f.   Did not invest the loan in an income-generating enterprise (Specify)

vi. Did you face any difficulty repaying your loan to the SACCO in the last loan cycle?_____

vii. (If yes) What caused your repayment problems? (tick below)

       a. Loan activity was not profitable   ☐

       b. I or others in my family had been sick in time   ☐

       c. Lack of sales/ demand   ☐

       d. Used enterprise capital on consumption (food, clothing, household goods)   ☐

       e. Sold on credit did not get paid back   ☐

       f. Family celebration (wedding, birth, etc.)   ☐

       g. Disaster (natural, theft, fire, etc.)   ☐

       h. Other (specify)

viii. Over the last 12 months, has your overall **household** income (increased/ decreased/ no change)

ix. (If increased at) Why did **your income** increase? (tick below)

       a. Expanded existing enterprise   ☐

       b. Undertook new enterprise   ☐

       c. Good agricultural season   ☐

       d. Sold in new markets   ☐

       e. Increase in demand/sales   ☐

       f. Other (specify) _____

x. (If decreased at) Why did **your income** decrease? (tick below)

       a. Household member has been sick/died   ☐

       b. I have been sick   ☐

       c. Natural disaster (flood, drought)   ☐

       d. Poor agricultural season   ☐

       e. Poor sales   ☐

       f. Other (specify) _____

xi. Name **three** things you like most about the SACCO

       a. Lower interest rate than loan alternatives

       b. Steady source of working capital

       c. Training or informal technical assistance

       d. Easier guarantees than other sources of credit

       e. Saving motivation

       f. Efficiency

       g. Members solidarity compared to banks or other sources

       h. Other (specify) services, such as _____

xi. Name three things you like least about the SACCO

       a. High interest rates

       b. Size of initial or subsequent loans policies (frequency, too small amount)

       c. Forced savings

d. Loan cycle too long or too short policies
e. Meeting place/ or SACCO office not convenient
f. Dislike behavior/ attitude of loan officer
g. Meeting frequency too often or meetings too long
h. Transaction costs or slow disbursement
i. Lack of grace period

xiii. If you could change something about the SACCO to make it even better, what would you change?

_____

Thank You!

Appendix 2: Open ended Questionnaire for Group Discussion

1. What are the methods of saving in your area?

2. What are the main problems affecting your saving decisions?

3. Do people save their money in formal financial institutions?

4. What are the benefits of financial institutions?

5. What are the methods used to encourage and inform people to save their money in their financial institution?

6. What is your view on these formal financial institutions in saving mobilization? Compare SACCO with other financial institutions (ACSI, commercial bank, etc)

7. What is your perception on the difficulties that discourages you to save in the financial organisation in relation to their working procedure?

8. Do you feel that you are getting sufficient interest rate of return for your deposit?

9. What is your perception in the difference between the interest rate paid to depositors and borrowers?

10. How do you compare the interest rate you are asked by the different lending organisations? Compare SACCO with other financial institutions (ACSI, commercial banks, etc) and also with private lenders

11. What do you feel on the different interest rate levels of these institutions?

12. What are the criteria used to identify new borrowers by different formal lending institutions?

13. Compare financial institutions (ACSI, SACCO, Commercial banks, etc) based on the following criteria

    - Ability in preparing an application letter and filling different formats
    - Convenience of working time and place for the clients
    - Working ethics and efficiency of the officials of the institutions
    - Saving mobilization
    - Size of loan
    - Target groups
    - Interest rate for borrowing
    - Interest on deposit
    - Provision of training

- Sharing benefit

- Repayment time

- Collateral requirement

- Measures for collecting outstanding loans

- Others (specify)

14. What are the forces and motivation for creation of SACCOs?

15. How do you feel the introduction of SACCO in the area?

16. Did you involve in the establishment of SACCO?

17. Are you familiar with the SACCO Rules?

18. Who assigned management committee?

19. Who is the owner of SACCO?

20. Did you attend general assembly?

21. How have the economic situations of members changed since they joined SACCO?

22. Did you believe SACCO contributes for member household food security? How?

23. How does this compare with other people living in your area who were under similar economic conditions?

24. What are the strengths and weaknesses of SACCO?

25. Is there anything about the SACCO you would like to see improve? How?

<div align="center">Thank You!</div>

Appendix 3: Checklist for Key informant interview (SACCO management & employees)

1. Why and when was the SACCO started? History?

2. Can anybody join the cooperative?

3. Are there any criteria to join the cooperative?

4. If yes, what are the criteria to join SACCO?

5. What financial services does the SACCO provide?

6. Size of the SACCO

Size of the SACCO	2006	2007	2008	2009	2010
Number of members (F, M)					
Total no. of staff					
No. of savers					
Value of savings					
No. of borrowers					
Total no. of loans outstanding					
Total value of loans outstanding					
Repayment rate					
Total assets					
Profit/loss					
Shareholders/members' equity					
Liabilities					
Retained earnings					

7. What are your funding sources? Please indicate %ages.

- Equity ( ) …………………
- Deposits ( ) …………………
- Donor funds ( )
- Government ( ) …………………
- Other (please specify) ( ) …………………

8. What is about the trend of members of the SACCO? Increase, stable or decrease?

9. If increased or decreased, why?

10. Explain the management of SACCO.

11. Do you have bylaws?

12. How did the SACCO bylaw have set up?

13. Who can amend the bylaw?

14. How did the "management committee" have set up?

15. How did the cooperative empower women members?

16. How often does the management committee organise the meeting among the members?

17. Explain the opportunities and threats of SACCO?

18. Are clients required to make forced savings? Yes ( ) No ( )

19. How much is a member required to save before a loan is disbursed? _____

20. Annual interest rate on deposit accounts

21. Where are members' savings kept? …………………………………………………...

22. Can members withdraw their forced savings? Yes ( ) No ( )

23. If yes, under what circumstances?

24.   Are savings/deposits used for onward lending? Yes ( ) No ( )

. What loan products does SACCO offer?

- Agricultural loans ( )

- Manufacturing loans ( )

- Housing loans ( )

- Trade/commercial loans ( )

- Consumption loans ( )

- Loans to repay existing loans ( )

- Other (please specify)…………………………………………………………

26. Is there any training prior to lending? Yes ( ) No ( ) Duration………………

27. What is the period between a member joining and their first loan?

28. What are the criteria used to identify new borrowers?

29. What was the maximum amount of money provided by the SACCO?

30. Annual interest on credit

31. Do you require collateral? Yes ( ) No ( )

32. If yes, what collateral do you accept?

    a.   Forced savings ( )

    b.   Land ( )

    c.   Animals ( )

    d.   Personal guarantees ( )

    e.   Other (please specify) ……………………..…………………………

33. What is the relationship between primary levels SACCO with union?

34. Did the bylaw of SACCO about benefit sharing? Yes ☐ No ☐

35. If yes, how many times the SACCO distribute dividend?

36. Maximum amount_____ Minimum amount_____

37. What has been the relationship between commercial banks and other financial institutions with SACCO?

38. Who are responsible for monitoring and evaluation of SACCOs activities?

39. How do you evaluate the economic benefit of SACCO?

40. Do you believe the SACCO contributed on household food security?

41. If yes, explain with tangible example_____

42. What are the main problems of the SACCO?

43. Any recommendation in order to improve the benefit gained from RUSACCOs.

<div align="center">Thank You!</div>

Appendix 4: Checklist for Government Officers (From *Kebele* up to Regional level Cooperative experts)

1. Why RUSACCOs? (Reasons for the introduction of RUSACCOs)

2. When was SACCOs started (history of SACCOs)?

3. What are the basic activities of RUSACCOs?

4. Explain the opportunities and threats of RUSACCO.

5. How can RUSACCOs run saving and credit activities?_____

6. What are your role and responsibility in the establishment and management of SACCOs?

7. What is the strategy of regional government regarding RUSACCOs?

   - Development plan

   - Institutional arrangement

   - Intervention

8. What is about the trend of SACCOs establishment? Increase, stable or decrease why?

9. Do the saving and borrowing activities of members improved or decreased since establishment? How? _____

10. Do SACCOs improve households' food security? If yes, how?

11. What is the relationship between SACCOs and other types of rural cooperatives?

12. Could you explain the level of relationship between primary level SACCOs with union SACCOs?

13. Do the members perception on saving and borrowing activities improved because of SACCO?

14. What kind of relationship between RUSACCOs with other financial institutions (commercial banks, ACSI, etc)?

15. What do you consider to be risks or opportunities for Banks and SACCOs in these relationships and what would you suggest/recommend as the best ways of approaching their relationships with commercial banks.

16. Do the people participate in SACCOs management? How?

17. Do you think that members can more actively participate in SACCOs management?

18. Who are the stakeholders relevant to the establishment and strengthening SACCOs?

19. What are the main sources of finance for RUSACCOs?

20. How do you evaluate SACCOs with other financial institutions?

- Size (# of users, capital, area coverage, etc)

- Ownership of equity (ownership of institution)

- Rules/ decision making

- Eligibility/ screening

- main source of funding

- Interest rate

- Structure

- Main type of guarantee

- Management

20. Explain the main achievements of RUSACCOs?

21. What are the main problems of RUSACCOs?

22. Evaluate the RUSACCOs financial performance.

23. Is there anything about the SACCO you would like to see improve? How?_____

Thank You!

Appendix 5: **Focus group discussion participants**

Woreda/ **Region**	**Group Discussion**							
	Member				Non member			
	No of FGDs	Male	Female	Total	No of FGDs	Male	Female	Total
Lay Gayint	3	10	5	15	2	11	2	13
Dejen	3	17	5	22	3	13	3	16
Region	-	-	-	-		-	-	-
Total	**6**	**27**	**10**	**37**	**5**	**24**	**5**	**29**

Appendix 6: Key informant participants

Woreda/ Region	Key Informant								
	Government Coop. Facilitator			RUSACCO board member			Cooperative employees		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Lay Gayint	1	-	1	-	1	1	2	1	3
Dejen	1	-	1	1	-	1	1	2	3
Region	1	-	1	-	-	-	-	-	-
Total	**3**		**3**			**2**			**6**

Appendix 7: Conversion factors used to compute tropical livestock unit (TLU): Africa South of Sahara

Animal	TLU
Cattle	0.50
Sheep	0.10
Goats	0.10
Asses	0.30
Horses	0.50
Mules	0.60
Chickens	0.01

Source (Chilonda and J 2006)

Appendix 8: Study Areas RUSACCOs Profile

No	*Woreda*	RUSACCO	Date of Estab.	Number of Members			Saving in BIRR	Capital In BIRR
				M	**F**	**Total**		
1	Dejen	Gojam Ber	2002	149	134	283	210527.46	75829.27
2		Andnet	2003	75	43	118	61038.11	29925.96
3		Tesfa	2003	147	150	297	84400.00	43813.03
4		Shewa Ber	2004	41	21	62	30610.00	10289.38
5		Addis Alem	2004	83	32	115	51796.00	49684.63
6		Mesret	2004	111	43	154	53855.00	30254.38
7		Gubya Ber	2005	71	41	112	28810.00	23657.79
8		Birhan	2005	55	19	74	17655.00	9518.4
9		Dilinad Ber	2005	58	39	97	16965.00	18828.41
10		Misrak Ch.	2006	60	33	93	23140.00	19541.28
11		Tenkir	2006	30	14	44	10151	17758.6
12		Edget Chora	2009	23	9	32	na (not available)	5058.75
13		Addis zemen	2010	40	7	47	na	3374.16
14		Zib Gasha	2010	19	7	26	na	1475
15		Ad Bekindu	2010	45	5	50	na	1020
	Total			**880**	**569**	**1449**	**588947.57**	**340029.04**
1	L/ Gayint	A/ Tsehay	2002	74	29	103	65367.00	72956.18
2		Edget Ber	2002	60	60	120	67826.00	63614.17
3		Hiwot	2005	58	23	81	31886.00	62608.78
4		Teramaj	2005	55	37	92	28710.00	90982.16
5		Biruh Fana	2005	65	35	100	40153.00	53827.00
6		Tadage Alem	2006	83	35	118	41150.00	92497.15
7		Debe Tsion	2006	75	22	97	13530.00	26151.08
8		M/Adebabay	2006	89	11	100	18937.00	16047.00
9		Yefikir Fire	2006	120	5	125	21890.00	16450.00
10		Salezur Aba	2006	133	57	190	18430.00	37301.67
11		Ras Guna	2006	50	31	81	13260.00	16960.00
12		Fire Azel	2007	41	13	54	6720.00	3092.00
13		Felege Berket	2007	49	8	57	2790.00	21203.94
14		Temamen	2007	40	10	50	2500.00	14314.26
15		Edget Beras	2007	32	18	50	2000.00	13100.00
16		Mh/Silasie	2007	46	5	51	2782.00	2560.00
17		M/ Minch	2008	35	7	42	na	1260
	Total			**1105**	**406**	**1511**	**377931.00**	**604925.39**

Appendix 9: Gender Composition of Selected RUSACCOs Committee

Woreda	Name of SACCOs	Committee	Total N^o of committee members	N^0 of female committee members
Dejen	Gojam Ber	Control Committee	3	1
		Management committee	7	-
		Credit committee	3	-
		Education, Training& Information Committee	3	-
	Tesfa	Control Committee	3	-
		Management committee	7	-
		Credit committee	3	-
		Education, Training& Information Committee	3	-
	Addis Alem	Control Committee	3	1
		Management committee	7	-
		Credit committee	3	1
		Education, Training & Information Committee	3	-
Lay gaynt	Edget Ber	Control Committee	3	1
		Management committee	7	1
		Credit committee	3	1
		Education, Training & Information Committee	3	
	Alem Tsehay	Control Committee	3	1
		Management committee	7	1
		Credit committee	3	1
		Education, Training & Information Committee	3	

Appendix 10: Distribution of Cooperatives Saving and Credit Unions in the ANRS

Administrative Zone	SACCO Unions (Number)	Number of Primary Societies
East Gojam	4	183
West Gojam	3	91
North Gonder	1	28
South Gonder	1	31
North Wollo	1	33
South Wollo	3	139
Awi	3	106
North Shewa	1	34
Total	17	

Source: Amhara National Regional State Cooperative Promotion Agency 2011 Report

Appendix 11: **Variance Inflation Factor (VIF)**

Variable	VIF	1/VIF
Educlvl	4.07	0.245985
Educated	3.82	0.261933
Livestock	1.84	0.542606
Familsz	1.54	0.648959
Income	1.51	0.664443
Participothr	1.26	0.796134
Maritalsta~s	1.25	0.800814
Particplcld	1.24	0.807172
Sex	1.21	0.827952
Distfromsac	1.14	0.877135
Mean VIF	1.89	

Remark: Since VIF<10, there is no potenital collinearity problem.

Appendix 12: ANOVA Table

Source	SS	df	MS	F	Sig
Model	23.512	9	2.6124	12.62	0.0000
Residual	101.626	491	0.2070		

Predictor variable: Constant, Gender, Marital Status, Educational level, Family size,

Number of livestock, Income, distance from RUSACCO office

R^2=21.25% Adj. R^2=17.02

Appendix 13: Pstest Sex Age Occupation Maritalstatus Familsz Educlvl Farmexp Sizland Livestock Distfromsac Particpatiacsi Particplcld Participothr

Variable	Mean			t-test	
	Treated	Control	%bias	t /t/	p>
Sex	.26407	.29437	-6.8	-0.72	0.469
Age	41.571	41.727	-1.3	-0.14	0.889
Occupation	.8658	.8658	0.0	1.00	1.000
Maritalstatus	.94372	.93939	1.6	0.20	0.843
Familsz	5.2208	5.1429	4.4	0.48	0.628
Educlvl	1.8312	1.8398	-0.7	-0.07	0.945
Farmexp	24.693	25.004	-2.5	-0.28	0.781
Sizland	.97855	.89221	12.4	1.29	0.198
Livestock	3.2926	3.2955	-0.1	-0.01	0.991
Distfromsac	24.398	23.641	3.0	0.36	0.720
Particpatiacsi	.18615	.21212	-6.6	-0.70	0.486
Particplcld	.42424	.34632	17.1	1.72	0.086
Participothr	.48485	.54113	-11.5	-1.21	0.227

Source: **Computed From Field Survey Data, 2011 and 2012**

Appendix 14: Histograms of Estimated Propensity Scores
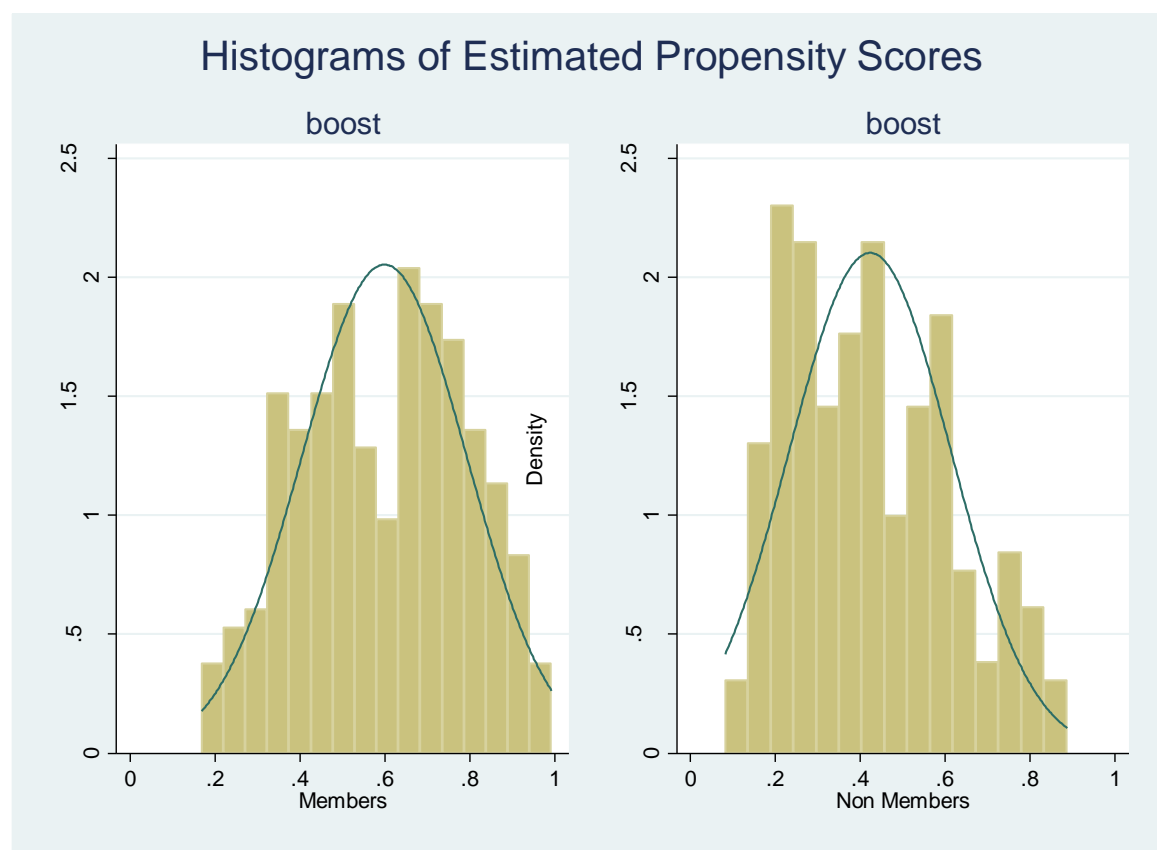
Source: **Computed From Field Survey Data, 2011 and 2012**

Appendix 15: Sensitivity Analysis for Household Consumption Expenditure for RUSACCO Members

Gamma	Significance level		Hodges-Lehmann point estimates		95 % confidence interval	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
1	0.000036	.000036	66.6368	66.6368	34.2377	100.404
1.1	1.9e-06	.000433	56.3004	77.7579	23.5874	111.771
1.2	8.9e-08	.00295	46.2108	87.713	13.565	122.22
1.3	3.7e-09	.012983	37.9148	96.3229	4.34976	131.951
1.4	1.4e-10	.040716	29.5067	105.516	-3.83409	141.726
1.5	4.9e-12	.097878	21.9955	113.722	-11.4574	150.269
1.6	1.6e-13	.190673	14.7534	120.987	-18.6323	158.318
1.7	5.0e-15	.314439	7.88117	128.363	-25.6278	166.211
1.8	1.1e-16	.454609	1.83855	135.224	-31.5022	174.35
1.9	0	.592971	-4.01345	141.951	-38.0942	181.502
2	0	.714525	-9.48429	147.982	-43.7668	188.543

Source: **Computed From Field Survey Data, 2011 and 2012**

Appendix 16: Sensitivity Analysis for Household Food Expenditure for RUSACCO Members

Gamma	Significance level		Hodges-Lehmann point estimates		95 % confidence interval	
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
1	.000019	.000019	47.1957	47.1957	25.1956	69.913
1.1	9.5e-07	.000254	40.1087	54.5217	17.8479	77.8913
1.2	4.0e-08	0.00187	33.6087	61.3478	10.9565	85.1957
1.3	1.5e-09	.008813	27.4565	67.6087	4.95653	91.7609
1.4	5.3e-11	.029385	21.8043	73.413	-.826088	97.8261
1.5	1.7e-12	.07463	16.6304	79.1739	-5.6739	103.804
1.6	5.2e-14	.152713	11.7826	84.3913	-10.5435	109.5
1.7	1.6e-15	.263084	7.3913	88.9783	-15.0652	114.804
1.8	0	.395211	3.1087	93.9783	-19.4348	120.087
1.9	0	.532768	-.956524	97.913	-23.5217	124.717
2	0	.659984	-4.32607	102.185	-27.5652	129.239

Source: **Computed From Field Survey Data, 2011 and 2012**

Appendix 17:Amhara region number of RUSACCOs and members

Year	Number of RUSACCOs	Number of Members			%age of women
		Male	**Female**	**Total**	
2006/07	254	15229	4491	19720	22.77
2007/8	421	21880	8150	30030	27.14
2008/9	581	28718	11922	40640	29.34
2009/10	902	42773	18382	61155	30.06
2010/11	1084	50877	23816	74693	31.89

Appendix 18: Amhara region RUSACCOs members borrowing

Year	Number of borrowers				Amount loan disbursed in Birr	Amount loan disbursed in euro
	Male	Female	Total	%age of women		
2006/07	5044	1676	6720	24.94	7523141.01	327093.09
2007/8	10044	3321	13365	24.84	13702232.18	595749.22
2008/9	14136	5303	19439	27.28	21037042.75	914654.03
2009/10	17088	6695	23783	28.15	28120141.97	1222614.87
2010/11	26232	12682	38914	32.56	48231321.23	2097013.97

Appendix 19: Amhara Region RUSACCO members' saving

Year	Number of savers			Amount saved in Birr	Amount saved in euro
	Male	Female	Total		
2006/07	15221	4488	19709	5786253.32	251576.23
2007/8	21880	8150	30030	9477127.75	412049.03
2008/9	28718	11922	40640	14557710.9	632943.95
2009/10	42773	18382	61155	18211081.3	791786.15
2010/11	50877	23816	74693	27099863.5	1178254.93

Appendix 20: Amhara region RUSACCOs financial position

Year	Paid in capital	Reserve	Grant	Loan	Asset
2006/07	1,197,509.69	203663.28	1,751,633.72	5192467.61	9,065,274.30
2007/8	2,182,708.62	553,270.76	2,405,212.56	9,477,127.75	14,618,319.55
2008/9	2,940,038.42	800,024.68	2,724,237.16	14,557,710.85	21,022,011.11
2009/10	4,532,853.17	1,895,060.05	6,572,198.48	20,217,844.47	33,217,956.17
2010/11	**5,100,632.97**	**2,782,796.78**	**7,698,746.72**	**27,099,863.46**	**42,682,039.93**

Appendix 21: Strengths and Weakness of RUSACCO

	Strengths		Weakness

Strengths

No	Points
1	**Promote saving culture of the society:**

From previous chapters one can understand RUSACCO promotes the saving culture of rural poor. RUSACCOs designed various techniques to encourage society to save money that can serve as insurance and to borrow good amount of money from RUSACCOs. They designed, compulsory saving, voluntary saving and youth saving. Each technique has its own role in promoting the saving culture of the society.

2 **Reliable source of credit**

In rural Ethiopia there is limited source of credit. The establishment of the RUSACCO helps the rural poor to get reliable source of credit.

3 **Lower interest rate**

When compared with other lending institutions RUSACCOs are the cheapest source of credit. For example, in the study area the ACSI lending interest rate was 18 % whereas RUSACCOs maximum lending interest rate 10 % per annum.

4 **Proximity**

The office of RUSACCOs is in rural area where they established. On the other hand other formal and semi- formal financial institutions are in urban center. Therefore, it will decrease the transaction cost of both members and RUSACCO.

Weakness

No	Points
1	**Guarantee Requirement**

The basic problem of rural poor in the study area was the guarantee system of RUSACCO. The only guarantee for RUSACCO credit was personal guarantee. Such arrangement creates problems for limiting the amount of credit as well as the number of borrower. Since the guarantor member can't borrow from it.

2 **Amount of lending**

Most members of RUSACCO are very poor rural residents and their monthly saving was also small. Such condition results in small amount of credit disbursed to members.

3 **Loan cycle**

RUSACCO in the study provides only short term credit. However, members demand medium and long term credits. Therefore, members reported it was one problem of RUSACCO.

4 **Lending bureaucracy**

In the region RUSACCOs are at infant stage. They are very small financial institutions that can't hire professional staffs to perform the day to day activities. This implies that majority of the routine activities run by elected committee member. They lend members once in a month.